DOCUMENT RESUME

ED 054 596 EM 009 169
AUTHOR Leifer, Aimee Dorr; Roberts, Donald F.
TITLE Children's Responses to Television Violence.
INSTITUTION Stanford Univ., Calif. Inst. for Communication Research.
SPONS AGENCY National Inst. of Mental Health (DHEW), Bethesda, Md.
PUB DATE Aug 71
NOTE 221p.

EDRS PRICE MF-$0.65 HC-$9.87
DESCRIPTORS Age Differences; *Aggression; Behavior Rating Scales; Childhood Attitudes; *Children; Commercial Television; Mediation Theory; *Programing (Broadcast); *Television Viewing; *Violence

ABSTRACT

A paper-and-pencil measure of aggressive resonse was developed to study the effects on children of exposure to television-mediated violence. Using this measure, a series of experiments was conducted using actural television programs as stimulus material. The results of these studies suggest: 1) Although the majority of children understand the motivation and consequences of aggressive acts as they are presented on television, subsequent aggression is more affected by the amount of violence per se in the program than by the way in which the violence is presented; 2) aggression presented as being performed with good motivations may lead to greater subsequent aggression on the part of the viewer than aggression presented as being performed with bad motivation; 3) justification manipulations are effectively transmitted to all viewers, but these manipulations fail to influence the viewer's later level of aggression; 4) temporal separation between event and consequence may make it difficult for young children to see the relationship between aggression and the motivation for and consequences of aggressive acts. A general conclusion from these studies is that children, as they grow up, understand more about the television programs they view, but this understanding doesn't influence their aggressive tendencies. (JY)

CHILDREN'S RESPONSES TO TELEVISION VIOLENCE

Aimée Dorr Leifer and Donald F. Roberts

August, 1971

Institute for Communication Research
Stanford University

The research upon which this final report is based was performed pursuant to Contract No. HSM-42-70-54 with the National Institute of Mental Health, Health Services and Mental Health Administration, Department of Health, Education and Welfare, to Nathan Maccoby, Aimée Dorr Leifer, and Donald F. Roberts.

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ACKNOWLEDGEMENTS

We are grateful to numerous people who have provided the advice and assistance we needed to complete the work reported here. We wish especially to acknowledge those who played an integral part in the research, though we will still omit others who have helped when we needed it.

First, we owe thanks to Eleanor E. Maccoby, Department of Psychology, Stanford University, and to Nathan Maccoby and Wilbur Schramm, Institute for Communication Research, Stanford University, for their consultation and advice on various phases of the study.

We also acknowledge and appreciate those research assistants, Carolyn Clark, James Dillon, Henrietta Ferry, and Judy Juncker, and graduate students in Communication, W. A. Collins (now on the faculty at the University of Minnesota), Bernadette Nelson-Shapiro, Michael Nolan, and L. Theresa Silverman, who worked with most of the children and adults as well as participating in all other phases of the project. Gordon Woodley, a Stanford University undergraduate, also participated on several parts of the study. Two other graduate students, Reginald McGhee and Bruce McKay, provided technical assistance. Mr. McGhee also recorded and edited the majority of our stimulus tapes and provided us with astute observations on the world view television content promotes. Finally, our thanks to Mr. Jurgen Wolff, the artist who provided the drawings which were an integral part of many of our dependent variables.

Our research required many subjects, ranging in age from pre-school to adulthood, and we are indebted to them for their time, cooperation, and good humor. Particular thanks is owed to Dr. Edith Dowley and the

faculty, staff and students of Stanford University Nursery School, without whose unlagging assistance and excellent facilities most of our work with pre-school children could never have been carried out. We also wish to thank the administrations, staffs, faculties, and students of the Mountain View School District and the Kenneth N. Slater School, Mountain View, California; The Mountain View-Los Altos Union High School District and Awalt High School, Mountain View, California; the San Jose Unified School District and the Willow Glen Elementary School, Hoover Junior High School, and Willow Glen High School, San Jose, California; Our Lady of the Rosary School, Palo Alto, California; St. Joseph's School, Holy Cross High School, and St. Francis High School, Mountain View, California; St. Joseph's School, Menlo Park, California; St. Nicholas School, Los Altos Hills, California; St. Lawrence the Martyr High School, Santa Clara, California; and Serra High School, San Mateo, California. Finally thanks are due the Directors and staffs of the Palo Alto Recreation Department and the Palo Alto Young Women's Christian Association, Palo Alto, California.

Various adult organizations assisted in establishing adult norms for several phases of our work. We especially wish to acknowledge St. Thomas Aquinas Church, St. Mark's Church, the First Lutheran Church, and the Church of Jesus Christ of Latter Day Saints; the Parent-Teacher Associations of the Addison, Barron Park, Greendell, Hoover, Ortega, and Van Auken Schools; and the Little House senior citizens center, all of Palo Alto, California, and the St. Athanasius Church, Mountain View, California.

Thanks are also due to Screen Gems, Inc., and to Leonard Berkowitz, University of Wisconsin, Albert Bandura, Stanford University, and Percy H. Tannenbaum, University of California at Berkeley, for the use of several stimulus films.

Finally, we salute Hester Berson and Jan Matthews for their skill in preparing and assembling this manuscript and their patience in the Sisyphean task of getting us to finish it once and for all.

SECTION I

INTRODUCTION

Television is an important contributor to the socialization of our children. It is certainly not the only socializer, nor is it necessarily the most potent, but given the nature of the medium (cf., Siegel, 1969), the large amount of time children devote to viewing (cf., Schramm, Lyle and Parker, 1961), and the fact that children learn a great deal through simple observation of behavior (cf., Bandura, 1965b; 1969; Flanders, 1968), it is difficult not to believe that television has a significant impact on children's social behavior. Moreover, considering that a large part of what television portrays can be characterized as violent behavior (Catton, 1969; Gerbner, 1969), it is difficult not to be concerned about this impact.

Research over the past decade has shown that children can and do learn an extensive range of behaviors through observation of models; that a modeled performance may influence (inhibit or disinhibit) similar, as well as identical, behavior on the part of observers; that it makes little difference whether the modeled performance is live or film-mediated; and that a wide variety of cues in both the modeled behavior and the subsequent performance situation may mediate both an observer's learning and his performance (for discussion of theory and reviews of research see: Bandura, 1965b, 1969; Bandura and Walters, 1963; Flanders, 1968; Hartup and Coates, 1970; Roberts, 1971). Thus, a child observing a modeled performance, whether live or film-mediated (cf., Bandura, Ross and Ross, 1963a), may learn specific new behaviors (e.g., judo techniques)

and/or he may learn whether the newly acquired behavior or a similar class of behaviors already in his response repertoire (e.g., other aggressive acts) is appropriate in situations more or less similar to those in which the model appeared (cf., Bandura and Walters, 1963; Berkowitz, 1962a).

The distinction between a symbolic presentation's effect on learning and its effect on performance is important. Cues in the modeling stimuli may affect learning or performance or both (cf., Bandura, 1965b; 1969). For example, observation of contingent reinforcement delivered to a model may serve to sensitize the child to the behavioral or situational contingencies which led to the observed reinforcement (vicarious reinforcement leading to an increase in the probability of learning) and/or it may serve to increase the child's expectation of similar reinforcement for similar behavior (vicarious reinforcement leading to an increase in the probability of performance).

Performance also depends on cues in the subsequent behavioral situation. Thus, failure to perform an observed behavior need not imply failure to learn (Bandura and Walters, 1963; Mischel, 1968). Bandura (1965a) found that children who witnessed a model being punished for aggressive behavior initially failed to perform the behavior they viewed; but later, when supplied with sufficient incentives, they were able to reproduce the behavior accurately. Apparently they simultaneously learned the behavior and became sensitized to sanctions which inhibited performance of what was learned. Cues in the symbolic presentation (e.g., reward or punishment contingent on the behavior) interacted with cues in the subsequent behavioral situation (e.g., presence or absence of incentives) to influence the child's actions.

The learning/performance distinction is particularly crucial when we consider observational learning of aggressive behavior. On the one hand, North American society socializes such that there is early inhibition of much aggression (cf., Whiting and Child, 1953), while on the other, it teaches how, when, and where aggressive acts can or should be performed (cf., Sears, Maccoby and Levin, 1957). It is in this teaching of "why," "when," and "where" that television may be most influential. Various aggressive responses are not foreign to most children's behavior repertoires, and the commonly used ones are easily learned. However, children must also learn our society's rather complicated norms for why, where, and when to use these responses. They are often and repeatedly exposed to such norms through television and may learn much from such exposure.

Norms are often transmitted through models' motivations for aggression and the consequences of their aggression. This information is particularly suited to provide the child with cues about sanctions for and against aggression -- about when aggression is justified and when unjustified, when rewarded and when punished, when to be admired and when condemned. To the extent that a child perceives modeled aggressive behavior to be justified, rewarded, useful, or admirable in various situations, to that extent we might expect an increase in the probability of him subsequently aggressing.

There is some experimental evidence that these two variables do influence performance of observed aggression. Several investigators have found that, in general, positive, negative, or neutral consequences to a model for aggressive behavior (e.g., reward or punishment, success

or failure, etc.) respectively increase, decrease, or do not effect subsequent performance of imitative and non-imitative aggression (Bandura, 1965a; Bandura, Ross, and Ross, 1963b; Brodbeck, 1955; Rosekrans and Hartup, 1967). Similarly, other studies have shown that observed aggression which is perceived to be justified increases the probability of an observer's subsequent aggressive responses (Albert, 1957; Berkowitz and Rawlings, 1963).

Depiction of these two variables, motivation for aggression and consequences of aggression, is common to many dramatic television programs which portray aggressive behavior. Indeed, following the guidelines of the National Association of Broadcaster's Television Code (1969), television usually portrays criminal behavior, which is often violent, as unjustified and as leading to some kind of "inevitable" retribution. Following the experimental evidence, then, one could hope that television's portrayal of negative motives for and negative consequences of aggression would result in inhibition of subsequent aggression among children in much the same way that such inhibition seems to occur in laboratory experiments.

There are, however, several dangers inherent in attempting to generalize laboratory findings to non-laboratory settings. One of these has to do with the nature of the symbolic stimuli used in the two settings. Modeling stimuli used in laboratory experiments are usually short and focused on the behaviors being studied, behaviors which are often chosen to be novel and attention-getting. They manifest little of the character development, richness of setting, and display of roles and behaviors found in most television drama. The complexity of television programs

as stimuli is further increased in that they usually portray many acts with many different messages. For example, a detective program might depict a number of violent episodes, each with different motivations and different consequences. Indeed, television's portrayal of unjustified aggression leading to negative consequences usually involves an enforcer of laws or standards who engages in justified aggression, usually with positive consequences, in order to punish the villains.

Moreover, within television programs motives for and consequences of aggression may be widely separated from the aggressive act, both in temporal terms (e.g., aggression modeled early in the program may not be punished until near the end of the program) and in terms of interpolated information (e.g., sub-plots, character development, commercials, etc., which often occur between motive and act and/or act and consequences). Clearly, when considering television stimuli a relevant question is whether children even associate justifications for or consequences of aggression with the acts themselves -- a question which becomes especially important when we consider possible age differences in effects of television violence.

Another problem in generalizing laboratory findings, then, has to do with the lack of studies of developmental differences in observational learning and disinhibition. Hartup and Coates (1970), after a thorough search, were able to find only nine such studies. These studies indicate no age-related differences in performance of simple model behaviors without explicit instructions to imitate, but clear increases with age in performance of complex model behaviors with explicit instructions to imitate. In addition, Leifer (1966) found that with increasing age children imitated

more of a series of complex play behaviors even without explicit instructions to imitate. Undoubtedly the learning/performance distinction is relevant to these findings in that older children may learn more of any modeled performance but may be more selective in what they choose to perform.

Evidence that increases in age might lead to increases in learning and in retention of what is learned, and in differences in which aspects of a complex stimulus are attended to, comes from studies of the development of children's intellectual functioning (e.g., Bruner, Olver and Greenfield, 1966; Flavell, 1963) of the development of verbal mediation (e.g., Flavell, Beach and Chinsky, 1966; Kendler, 1963; Marsh and Sherman, 1966), and of age-related differences in attention to symbolically mediated behavior (e.g., Collins, 1970; Hale, Miller and Stevenson, 1968; Roberts, 1968). Such findings imply age-related differences in the impact of cues related to motivations and consequences. For example, Leifer and her students (1972) found age differences in comprehension of cues inherent in complex behavioral sequences in an entertainment film, with older children superior to younger children in sequencing main events and in understanding such things as feelings and motivations of characters. To the extent that "feelings and motivations" function as cues, we might expect differences across age in learning and subsequent performance of television-mediated behavior.

There is also reason to suggest that motivations may not function as effectively as consequences as controlling cues for young children. Young children pay relatively little attention to motivation in judging the morality of another's act (Flavell, 1963; Hoffman, 1970; Kohlberg, 1964;

Piaget, 1962) when both motivation and consequences are presented. Moreover, they are willing to judge morality solely on the basis of amount of damage done, adult sanctions, and acts of God. They also do not use motivation as a basis for judging kindness of another's act (Baldwin and Baldwin, 1970).

A final area in which developmental differences in observational learning might be expected is in discount of the modelling stimulus as a source of imitation or disinhibition. Dysinger and Ruckmick (1933) reported clear increases with age in adult discount of the material presented in feature films. If this finding also pertains to the entertainment fare of current television, one might expect less impact of the depicted aggression, motivations, and consequences among older children and adults than among younger children even though older children are better able to understand and apply what they have seen. Some effect of exposure exists, since there is a substantial body of work indicating that entertainment films and videotapes will disinhibit aggressive responses in adolescents and adults (e.g., Berkowitz, 1970; Walters and Thomas, 1963).

Some of the important, unanswered questions, then, have to do with developmental changes in perception and comprehension of cues depicting motivations and consequences, with age-related changes in the influence of these cues on both learning and subsequent performance of observed aggression, and with age-related, relative differences in the impact of these two variables. For example, in order to make valid production decisions it would be important to know whether children first respond to cues pertaining to motives or to cues pertaining to

consequences, whether these two variables have differential impact at different ages, and what happens when the two cues are incongruent (e.g., justified motives for aggression leading to negative consequences).

A final problem in generalizing from laboratory experiments is in the dependent variables used. Experimental studies, in order to make comparisons among various independent variables, facilitate performance of observed aggression by removing the usual sanctions against aggression. These studies then concentrate on manifested behavior. Outside the laboratory, however, sanctions against aggression are usually operative. Hence, behavioral manifestations of observed aggression may occur infrequently. This does not mean, however, that observing aggression has no effect. Rather, it may simply mean that the influence of observed aggression is not strong enough to overcome operating sanctions in a particular situation -- even though observation may well have increased the probability of aggressive behavior under some conditions. This is particularly true in the situations social scientists can directly observe and measure. For example, observation of television violence could increase the probability of subsequent aggression from 5 percent to 20 percent, which is certainly a significant change, but still not enough to provide many overt aggressive acts to analyze as data. It seems, then, that some measure of change in the perceived acceptability of aggression, in the position of aggressive responses in a hypothetical response hierarchy, after viewing television violence, is called for.

The work reported in the following pages attempts to deal with some of the problems raised above. First, the research attempted to use as stimuli either complete television programs or edited programs as

close to the original as possible. Further, our concern has been to study the effects across age of exposure to television-mediated violence. Particular emphasis is placed on the motivations for and consequences of violence, how these cues are learned, and their role in modifying the effects of exposure to violence per se. For these purposes, we have developed a paper and pencil measure of aggressive response which is conceptually close to the child's everyday life and which enables us to judge whether viewing television-mediated violence changes the probability of aggressing in day to day conflicts.

SECTION II

CONSTRUCTION AND VALIDATION OF RESPONSE HIERARCHY INSTRUMENT

Rationale

The response hierarchy measure was developed to estimate aggressive behavior in day to day conflicts, rather than aggressive behavior within a laboratory setting. It was designed for rapid administration to individual young children and to groups of older children.

Most experimental studies of the effects of exposure to modeled aggression employ contrived measurement situations. They are frequently arranged to facilitate performance of the observed aggressive behaviors or of other aggressive behaviors. A child may be placed in a situation similar to that in which the model performed and/or in one where the usual sanctions against aggression are removed. Such procedures are perfectly appropriate: they increase the probability of aggressive behavior to a level at which the effects of the independent variables may be assessed.

However, under most circumstances in children's and adult's lives, sanctions against aggression are operative -- conditions subsequent to viewing modeled aggression are not arranged to facilitate aggressive responses. Thus, behavioral manifestations of aggression after viewing may occur relatively infrequently; yet it is these manifestations which are of particular interest in estimating the effects of television viewing.

Viewing violent television programs may make infrequent aggressive behavior relatively less infrequent in any given situation.

However, this still may not create a statistically significant change in overt behavior in non-laboratory settings (e.g., Siegel, 1956), since behavior depends upon the situation in which the child finds himself and the relative strength of various responses in his behavioral repertoire as well as exposure to modeled aggression.

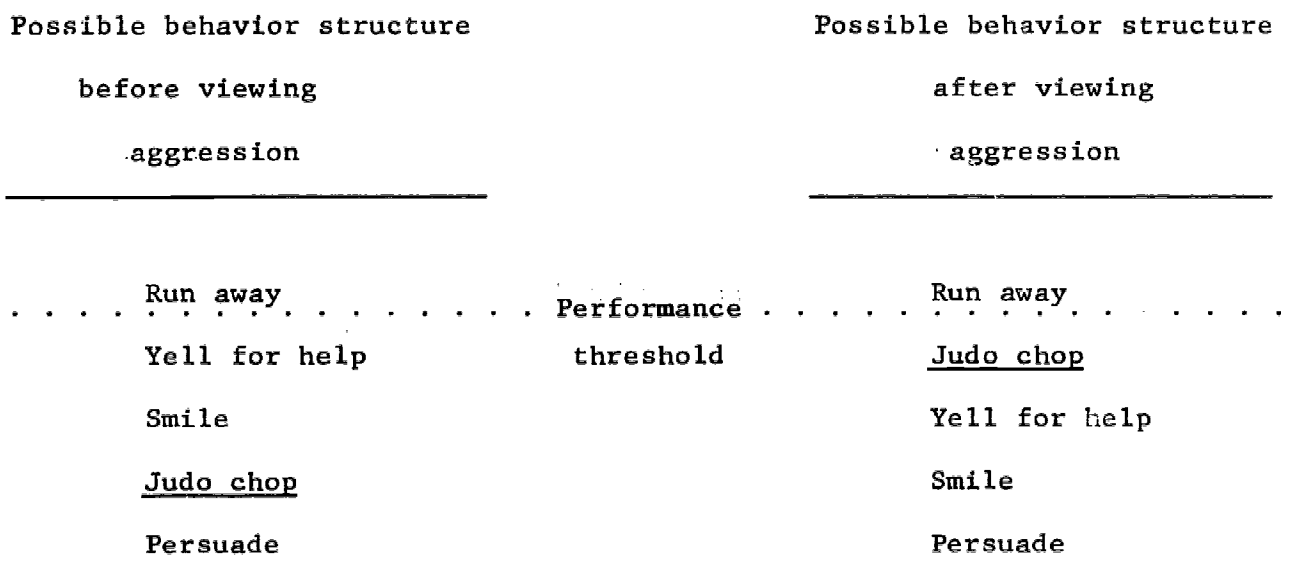
Therefore, it is desirable to have a measure of the effect of viewing violence which does not rely solely on overt aggressive behavior. This measure should represent as nearly as possible behavior in daily encounters in which aggression is possible. It should measure changes in the probability of performing aggression -- of aggressive responses being more likely to be performed, viewed as more acceptable, or viewed as acceptable in more situations -- even though the probability of aggressive behavior might not increase beyond a performance threshold.

We conceived of aggressive responses as one class of behaviors in a response repertoire similar to Hull's habit-family hierarchy (cf., Hilgard and Bower, 1966) or White's hierarchical arrangement of learning processes (1965). That is, when faced with a stimulus such as a conflict situation, the child has available to him a number of behavioral responses or classes of responses which he may perform, as shown in Figure II-1. Some of these would be aggressive responses.

Insert Figure II-1 about here

The likelihood that any given response will be performed is a function of many variables, including the child's socialization and the way he perceives the conflict situation and its contingencies, and these influence the relative strength of responses in the repertoire.

Figure II-1. Possible Responses in a Hypothetical Response Hierarchy.



To the extent that television content performs a socializing function or is capable of changing the child's perceptions of various contingencies in a conflict situation, then, observations of television-mediated violence may influence the position of aggressive responses in his response hierarchy. For example, an aggressive response might start out low in a child's hierarchy (i.e., has a low probability of performance in most situations), as indicated in the first column of Figure II-1. It then might move upward in the hierarchy as a consequence of exposure to television-mediated violence, as indicated in the second column of Figure II-1. One can then argue that the child has been affected by television viewing, even though overt aggressive behavior is unlikely because the response is still below his performance threshold.

Development

Our aim was to develop a paper and pencil instrument based on conflict situations and responses to them, including aggressive responses, which were conceptually close to the child's life experiences. To obtain the situations and responses, boys and girls from three to sixteen years old responded to an open-ended interview about what made them angry, what they did about the situations that made them angry, how one could hurt people, and when hurting people was justified. From these answers a set of typical situations which made children angry and four characteristic types of response to such situations -- physical aggression, verbal aggression, leaving the field, and positive coping with the frustrator (including appeal to authority) -- were developed. An item consisted of one situation and four responses, one per response type. Responses were randomly assigned

to each situation. The result was a pretest instrument of 36 items, 12 appropriate for children from four to ten years old, 12 appropriate for children ten to sixteen years old, and 12 appropriate across the entire age range.

Items were presented using a paired comparisons technique. All possible combinations of the four responses for each situation were presented, giving six pairs of responses to each situation. This approach provided the option of using data from all Ss and/or from only those who had a consistent (transitive) ranking of the four responses.

Stick figure illustrations of the responses were drawn. The appropriate pairs of them were presented on separate pages of a booklet for younger children and on slides for older children. Young children marked the picture of the response they preferred and older children marked the letter (A or B) of the response they preferred. Two very simple practice items were provided. Appendix A-II illustrates one complete item in the instrument.

The 36 pretest items were administered to 91 boys and girls four, seven, ten, thirteen, and sixteen years of age. All Ss responded to the 12 items appropriate for the entire age range; four-, seven-, and ten-year-olds received the 12 items appropriate for younger children; another group of ten-year-olds and thirteen- and sixteen-year-olds received the 12 items appropriate for older children. Order of presentation of items and of the six pairs of responses within items was randomized. Ss were asked to consider each situation as one they had encountered and to choose the response they would actually perform when in that situation (see Appendix B-II for instructions).

Items on which many children failed to give hierarchical responses were eliminated. For the remaining items, a simple count was made of the number of times each response was chosen. Thus, on any item a physical aggression score could range from 0 (physical aggression never chosen) to 3 (physical aggression chosen every time it was presented). Verbal aggression was similarly scored. Combined aggression scores (physical + verbal aggression) could be obtained by counting choice of both physical and verbal aggression, and ranged from 1 to 5.

Items were then ranked by frequency of choice of physical aggression and frequency of choice of physical plus verbal aggression. Items which elicited similar rankings for aggressive responses within each grade were selected. There were 9 such items: 3 appropriate for younger children, 3 appropriate for older children, and 3 appropriate across the entire age range. By this procedure in any developmental study, the same data would be available over all ages for 3 items and comparable data for younger and for older children would be available for 3 more items. The final instrument is in Appendix C-II.

Mean frequency of choice for each of the items in the final instrument is summarized in Table II-1 for physical aggression and Table II-2 for physical plus verbal aggression. The consistent

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Insert Table II-1 and Table II-2 about here

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age-related pattern in these tables, high aggression scores for four-year-olds, dropping to low scores for seven-year-olds, then rising again among older children, illustrates both the importance of investigating aggressive behavior across ages and the rationale for selecting

Table II-1

Mean Frequency of Choice
of Physical Aggression by Age and Sex*

	Item number in final version		Given items for ages 4-10 and 4-16: Four Years	Seven Years	Ten Years	Given items for ages 10-16 and 4-16: Ten Years	Thirteen Years	Sixteen Years
Items from Pretest Set for Ages 4-16	1	Boys	1.0	0.6	1.6	2.2	2.0	2.5
		Girls	1.2	0.3	1.0	1.0	0.8	1.8
	2	Boys	1.5	1.0	1.3	2.3	2.3	2.2
		Girls	0.9	0.7	1.1	2.3	1.2	1.0
	3	Boys	0.9	0.5	0.8	1.4	1.1	0.9
		Girls	1.2	0.4	0.5	0.7	0.6	0.6
Items from Pretest Set for Ages 4-10 and 10-16	4	Boys	1.4	0.4	1.0	2.4	2.4	2.8
		Girls	1.8	0.3	0.8	1.7	1.5	2.2
	5	Boys	1.2	0.6	1.2	1.8	1.4	2.1
		Girls	1.4	0.0	0.6	0.7	1.0	0.8
	6	Boys	1.2	0.4	0.6	1.6	1.1	1.5
		Girls	1.5	0.3	0.5	0.7	0.4	0.5

*possible range = 0 to 3.0

Table II-2

Mean Frequency of Choice of Physical Plus Verbal Aggression by Age and Sex*

	Item number in final version		Given items for ages 4-10 and 4-16: Four Years	Seven Years	Ten Years	Given items for ages 10-16 and 4-16: Ten Years	Thirteen Years	Sixteen Years
Items from Pretest Set for Ages 4-16	1	Boys	3.0	1.6	2.6	3.3	4.2	4.6
		Girls	2.3	1.4	2.9	2.3	2.9	3.6
	2	Boys	3.1	2.0	2.7	4.1	4.3	4.1
		Girls	2.5	1.8	2.9	3.8	2.8	3.0
	3	Boys	2.4	1.6	2.0	2.8	2.6	2.4
		Girls	2.2	1.1	2.0	1.8	1.9	1.8
Items from Pretest Set for Ages 4-10 and 10-16	4	Boys	2.4	1.5	3.0	4.1	3.9	4.8
		Girls	3.2	1.4	2.4	3.4	3.7	4.0
	5	Boys	2.1	1.6	2.3	3.8	3.7	4.1
		Girls	2.8	1.3	2.7	1.9	3.0	3.2
	6	Boys	3.0	1.6	1.9	3.6	3.4	3.9
		Girls	2.8	1.5	1.7	2.7	2.8	3.0

*possible range = 1.0 to 5.0

final items on the basis of comparability of item rankings rather than on comparability of response hierarchy scores themselves.

Test-Retest Reliability

Test-retest reliability of the instrument was assessed using a sample of 18 four-year-old boys and girls, with a time interval of one month between initial and final testing. The correlation coefficient for physical aggression was .72; for verbal aggression, .57; for physical plus verbal aggression, .84. Test-retest reliability was judged acceptable, at least at this age, given the small N and the obtained correlations.

Validation

Although the final version of the response hierarchy instrument appeared to have good face validity, data on its correlation with actual behavior were judged desirable. Several validation studies were conducted.

An experiment by Bandura, Ross, and Ross (1963b) was chosen as a validation model for younger children. Three videotapes with two twelve-year-old male models were constructed paralleling three of Bandura, Ross and Ross' four experimental conditions. In two of the tapes Rocky aggressed at length against a wide assortment of toys and finally against Jamie to gain access to Jamie's toys. In one version Rocky was rewarded for his aggression, the final scene depicting Jamie cowering in a corner and Rocky seated stage center, eating a cookie and drinking a coke with most of the toys gathered around him. In the other version Rocky was punished for his aggression, with Jamie walloping him and reclaiming all his toys and Rocky retreating to the corner in tears.

The third videotape showed the two boys playing together with the same set of toys, actively but not aggressively.

Nursery school boys and girls were taken individually from their classroom to the nurses' lounge which contained a television monitor. Each S was "allowed" to watch television while E completed "some work" she had to do. After viewing, E and S proceeded to the experimental room.

Half of the Ss, all of whom were run first, found the room full of toys, some of which had appeared in the videotape and some of which had not. S was told to play while E remained in the room absorbed in her "work." Play behavior was scored particularly for imitative and non-imitative aggression for 20 minutes in 5 second intervals, by an observer behind a one-way mirror. O was blind as to which videotape S had viewed. Three Ss, all in the aggression rewarded condition, were scored jointly by two Os. Percent agreement over all 240 five second intervals was .96 for one female S and .99 and .90 for two male Ss.

For the remaining half of the Ss, the room contained not toys, but a second E, also blind as to which videotape S had viewed, who administered the response hierarchy items. The first E again remained in the room "working."

Results for the behavioral half of the study were analyzed in terms of imitative and non-imitative aggression scores. Results for the response hierarchy half of the study were analyzed in terms of the number of times physical aggression, verbal aggression, and physical plus verbal aggression responses were chosen. Group means for both the behavioral and physical and verbal aggression response hierarchy scores are presented in Table II-3 and plotted in Figure II-2.

Insert Table II-3 and Figure II-2 about here

For imitative aggressive behavior, a 3 by 2 analysis of variance (ANOVA) (conditions by sex) and a Kruskal-Wallis one-way ANOVA showed no significant differences between conditions, although the Kruskal-Wallis analysis was significant in the Bandura study with more Ss. Mann-Whitney analyses of the three groups by pairs yielded differences significant at $p < .001$, with rewarded more aggressive than punished, rewarded more aggressive than active, non-aggressive, and punished more aggressive than active, non-aggressive, replicating Bandura's results.[1]

Inspection of non-imitative aggression scores revealed one aberrant score in each of three cells (rewarded boys; punished boys; punished girls). This resulted in notable nonhomogeneity of variance across cells. Two different techniques were used to correct for this: (1) the 3 Ss were deleted and a 3 x 2 ANOVA performed on the remaining raw scores and (2) variance stabilizing transformations were applied to the raw scores for all Ss prior to performing the 3 by 2 ANOVA. The results were the same for both analyses and will only be reported for the first. There was a significant effect of conditions ($F=3.77$; $df=2,21$; $p < .05$) with more non-imitative aggression in the rewarded than the punished condition and more in the punished than the active, non-aggressive condition. Although there was no main effect for sex, a significant condition by sex interaction ($F=28.84$; $df=2,21$; $p < .01$) due to the

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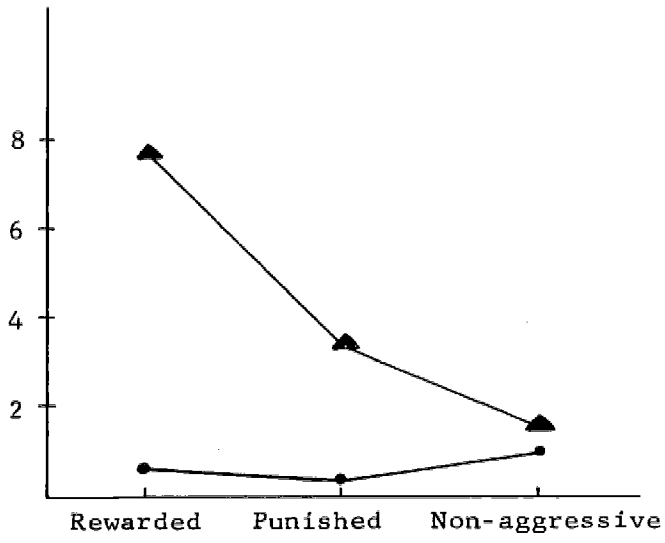
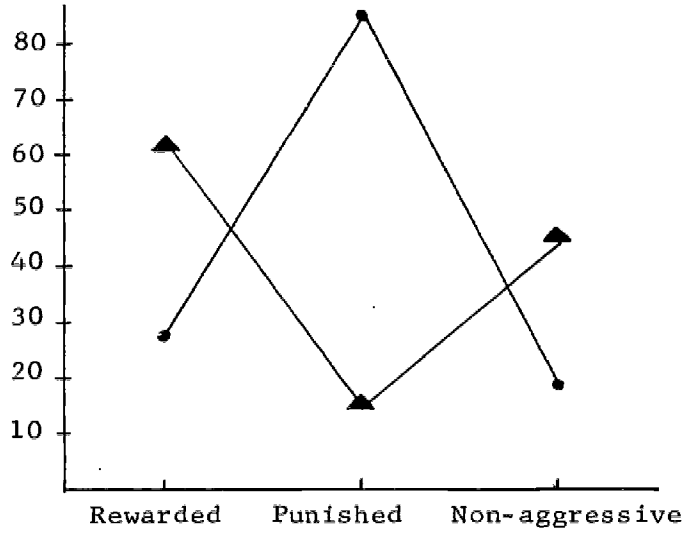
[1]For all analysis of variance tables reported in this section, see Appendix D-II.

Figure II-2. Comparability of Behavioral and Response Hierarchy Measures in Validation with Four-year-olds

Behavioral Measures

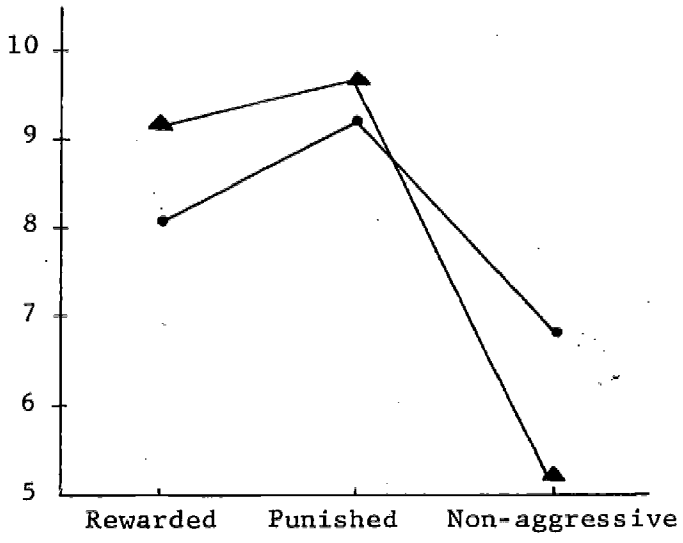


Imitative Aggression

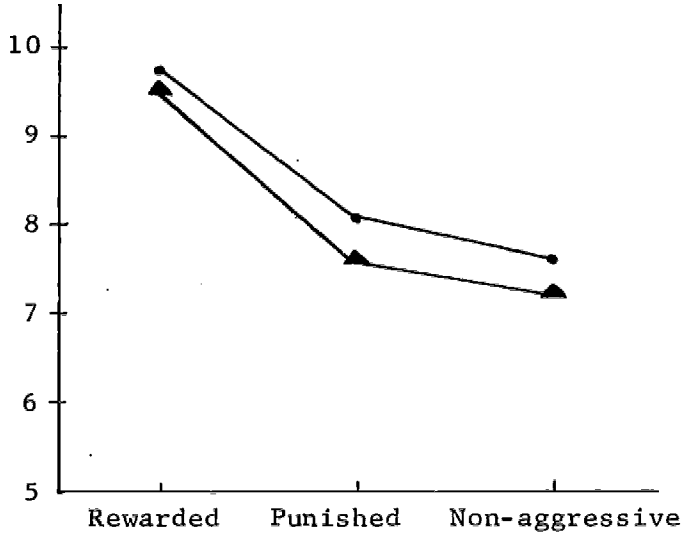


Non-imitative Aggression

Response Hierarchy Measures



Physical Aggression



Verbal Aggression

● Girls

▲ Boys

Table II-3

Mean behavioral and response hierarchy scores for four-year-old validation by sex and videotape condition (all Ss, raw scores)

	Imitative Aggressive Behavior*			Non-Imitative Aggressive Behavior*		
	Aggression Rewarded	Aggression Punished	Non-aggressive Active	Aggression Rewarded	Aggression Punished	Non-aggressive Active
irls-Mean	0.60	0.40	1.00	28.20	67.80	16.40
S D	1.20	0.80	2.00	10.78	34.78	15.81
oys-Mean	7.80	3.20	1.20	76.00	46.40	43.80
S D	8.61	5.91	1.47	33.46	64.70	14.66

* N = 5 per cell

	Physical Aggression Response Hierarchy**			Verbal Aggression Response Hierarchy**		
	Aggression Rewarded	Aggression Punished	Non-aggressive Active	Aggression Rewarded	Aggression Punished	Non-aggressive Active
Girls-Mean	8.12	9.37	6.75	9.75	8.00	7.62
S D	1.69	2.50	3.11	2.90	2.55	1.93
Boys-Mean	9.25	9.62	5.12	9.50	7.50	7.25
S D	3.77	2.83	2.93	1.66	2.40	2.77

** N = 8 per cell

differential effects of the punished condition on boys, who displayed little non-imitative aggressive behavior, and on girls, who displayed much non-imitative aggressive behavior. Both boys and girls displayed more non-imitative aggressive behavior in the rewarded condition than in the non-aggressive condition. These results replicate those of Bandura in all respects except that of girls' non-imitative aggression in the punished condition.

Each of the three response hierarchy scores (physical aggression, verbal aggression, physical plus verbal aggression) was analyzed in a two factor ANOVA (conditions by sex). F values for the effect of conditions reached significance in each analysis ($F=5.91$; $df=2,42$; $p < .01$, $F=3.37$; $df=2,42$; $p < .05$, and $F=5.73$; $df=2,42$; $p < .01$, respectively), with choice of aggression about the same for the rewarded and punished conditions and greater than that for the active, non-aggressive condition. F values for the main effect of sex and for the condition by sex interaction did not approach significance in any of the analyses.

The pattern of results using the response hierarchy scores differs from that of the behavior scores, as is apparent in Figure II-2 where response hierarchy scores increase in aggression after viewing punished aggression and behavioral scores decrease. However, the two sets of findings are not necessarily in conflict. Detailed analysis of the aggression punished videotape suggests that the different obtained patterns of results might be expected from the two measures.

The punished condition is the most complicated of the three scenarios: Rocky asks to play with Jamie's toys and is refused -- a reprehensible refusal on the part of Jamie. Rocky then aggresses against many of the toys and against Jamie -- also reprehensible. Finally,

Jamie asserts himself (in defense of his rights in a frustrating situation?), aggresses rather brutally against Rocky, and reclaims all his toys. Rocky's aggression is clearly punished, and one would expect little imitation of his actions and little non-imitative aggression with the toys he used -- both of which comprised a major portion of the behavioral measure. However, Jamie's aggression is quite useful and perhaps even considered justified in our society. It follows that since the response hierarchy measure consists of situations which are frustrating, and since children in the aggression-punished condition in fact see aggression demonstrated to be quite useful in such a situation, one might expect them to respond more aggressively to the response hierarchy measure. Thus, this difference between the two patterns of results does not appear to invalidate the response hierarchy measure, and the remaining data seem to validate it for four-year-olds.

The initial effort to validate the response hierarchy instrument among older children was unsuccessful and will be summarized briefly. The validation model was an experiment reported by Walters and Thomas (1963). Stimuli were either a videotape of a knife fight from Rebel Without a Cause (aggressive), as used by Walters and Thomas, or an excerpt from the television series Make Room for Daddy (non-aggressive), in place of the art film used by Walters and Thomas. Seventy-two thirteen-year-old boys and girls were Ss. For almost half of them from each condition, the dependent variable was intensity of shock administered to a male confederate during a subsequent "learning" experiment; the remaining Ss completed the response hierarchy instrument. Ss were run individually for the shock measure and in pairs for the response hierarchy measure by a male or female E, counter-

balanced across conditions, sex of S, and type of dependent measure. Es were blind as to condition of each S. Measures were obtained both before and after viewing.

Mean shock intensity scores and physical aggression response hierarchy scores are shown in Table II-4. For shock intensity, a 2 by 2 by 2 analysis of covariance (condition by sex of S by E, covarying on before scores) showed that the aggressive condition elicited slightly higher intensity shocks ($F=3.50$; $df=1,23$; $p < .10$), but no other effects. Similar analysis of the response hierarchy scores revealed no effect for condition, but an unexpected and largely uninterpretable effect for E on physical aggression scores ($F=9.91$; $df=1,31$; $p < .01$).

Insert Table II-4 about here

In order to increase the N per cell using the response hierarchy measure, an additional 19 boys and 19 girls, with a third E (male), saw the videotapes and completed the response hierarchy in an after-only design. Physical aggression after-scores from this second wave of Ss were combined with after-scores from the first wave, transformed, to stabilize the variances, and submitted to a three factor ANOVA (condition by sex of S by E). (See Appendix D-II for mean scores and ANOVA table.) There was no effect for condition. There was an effect of sex ($F=8.79$; $df=1,66$; $p < .01$), with boys giving more aggressive responses than girls. The effect for experimenter did not approach significance. Scores for verbal aggression and physical and verbal aggression were similarly analyzed. Again there was no effect for condition. Since the remainder of the results of these analyses are either uninterpretable or uninteresting in light of the failure to obtain an effect for condition, they are not reported here.

Table II-4

A. Mean Change Scores for Shock Intensity by Sex, Experimenter and Videotape Condition*

	Aggressive Videotape		Non-Aggressive Videotape	
	E 1	E 2	E 1	E 2
Girls Mean	.58	1.13	.20	.15
S D	1.60	1.75	.69	.32
Boys Mean	.12	.30	.32	-.17
S D	.68	1.97	1.30	.58

*N = 4 Ss per cell

B. Mean Change Scores for Response Hierarchy Physical Aggression by Sex, Experimenter, and Videotape Condition**

	Aggressive Videotape		Non-Aggressive Videotape	
	E 1	E 2	E 1	E 2
Girls Mean	.47	.73	.43	.63
S D	.14	.25	.42	.48
Boys Mean	.47	.57	.13	1.07
S D	.25	.51	.48	.34

**N = 5 Ss per cell

Finally, a second experiment attempted to increase the differential impact of the aggressive and non-aggressive stimuli by using a prize fight scene from The Champion and a rather dull travelogue. Forty-two thirteen-year-old boys and girls were run in groups, by a single male E, using an after-only design. Mean response hierarchy scores are presented in Appendix D-II. A 2 x 2 ANOVA (sex by condition) for each of the three types of response hierarchy score revealed only a tendency for the aggressive videotape to elicit slightly higher verbal aggression scores ($F=3.28$; $df=1,38$; $p < .10$) than the non-aggressive tape did. There were no other significant main or interaction effects for any of the three scores.

These two studies failed to validate the response hierarchy instrument among thirteen-year-olds, but, given the lack of difference between conditions on the behavioral measure (i.e., shock intensity), they do not necessarily invalidate it. The failure to obtain differences between the aggressive and non-aggressive tapes may be due to the age of the participating Ss. Walters and Thomas' significant results with shock intensity were obtained using groups of adult males, adult females, and fifteen-year-old males. It may be that the two year age difference between the present Ss and the youngest Ss tested by Walters and Thomas locates a difference in responsiveness to aggressive displays or in sensitivity to situations in which aggressive responses, behavioral or verbal, are measured. Comparison of the groups on shock intensity measures indicates that something like this might be the case. The one expected result that was found with the response hierarchy instrument was the sex difference in aggressiveness, although only in one of the preceding validation attempts with thirteen-year-olds.

In light of the failure to find differences among thirteen-year-olds in response to aggressive presentations on either dependent variable, one more validation with older children was attempted using a non-experimental approach.

The response hierarchy instrument was administered via slides to fifth grade Ss. Two fifth grade teachers independently rated each S on overt aggressive behavior in the school environment.[2] Teachers were asked to conceive of aggressive behavior in terms of "hitting, shoving, name calling, etc.". Ratings were obtained on a seven point scale ranging from very unaggressive (=1) to "very aggressive" (=7) (see Appendix E-II). Only those 34 Ss who responded to the response hierarchy instrument and who were rated by both teachers were included in the analyses reported here.[3]

The correlation between response hierarchy scores for physical aggression and teacher ratings of aggressive behavior was significantly different from zero for both teachers (Teacher 1: $r=.49$; $Z=3.15$; $p < .005$ and Teacher 2: $r=.33$; $z=2.02$; $p < .05$). Correlations between response

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[2] A fourth grade teacher in charge of several fifth graders also provided ratings. However, her ratings were omitted because she did not know more than half the students well enough to rate them and the distribution of the ratings she did complete was significantly different from the distributions of the two fifth grade teachers (probably due to her different comparison standard of fourth graders).

[3] Of a population of 54 Ss, 10 did not obtain parental permission to participate, 5 were absent during administration of the response hierarchy (which was unannounced), and 5 were not rated by at least one teacher because they did not know them well enough.

hierarchy scores for verbal aggression and teacher ratings of aggressive behavior were low (Teacher 1: r=.10; Teacher 2: r=.04), probably indicating that teachers based their ratings almost entirely on children's physical behaviors.

ANOVAs were performed for those high and low in rated aggression. The two teachers' ratings were simply averaged since there was high homogeneity of variance between them. Those students who obtained an average score of less than 5 were assigned to the low aggressive behavior group (N=15); those students whose average score was 5 or more were assigned to the high aggressive behavior group (N=19). The mean physical aggression scores for boys and girls rated high and low in aggressive behavior are presented in Table II-5 and Figure II-3. A two factor ANOVA (behavior

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Insert Table II-5 and Figure II-3 about here

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rating by sex of S) revealed a significant effect of teacher rating of aggressive behavior ($F=4.69$; $df=1,30$; $p < .05$), with Ss rated high in aggressive behavior choosing more physical aggression responses than Ss rated low in aggressive behavior. There was no significant effect of sex nor a behavior rating by sex interaction.

These relationships between response hierarchy scores and independent ratings of aggressive behavior, appear to validate the response hierarchy instrument for fifth graders. It does discriminate, for both boys and girls, among children who are rated by teachers as manifesting either more or less aggressive behavior in the normal school environment.

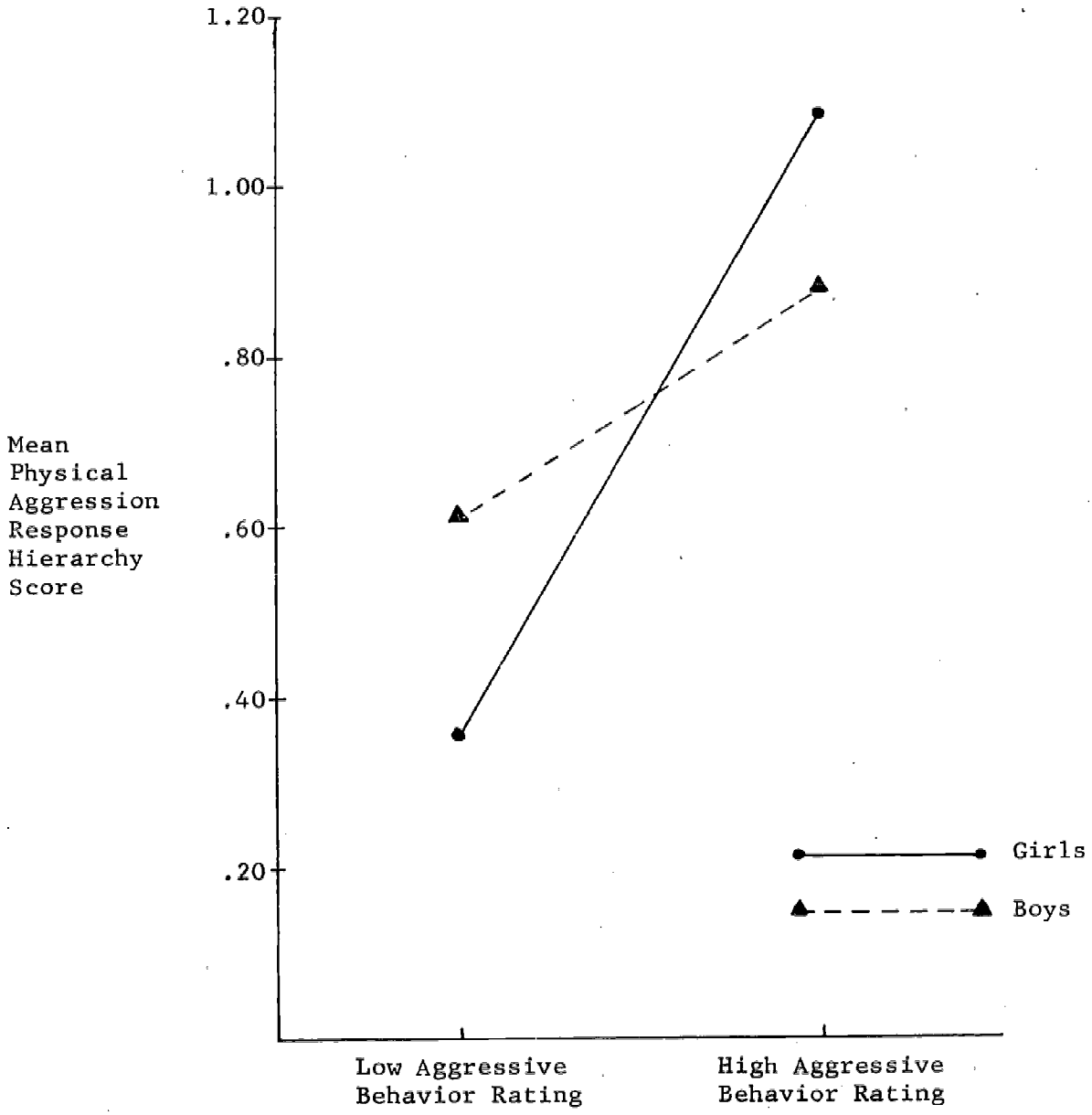
Table II-5

Mean Response Hierarchy Scores for Fifth Graders by Sex and Teacher Rating of Aggressiveness in the School Environment

	High Aggressive Behavior	Low Aggressive Behavior
Girls-Mean	1.07	0.35
S D	0.94	0.36
N	12	11
Boys-Mean	0.88	0.67
S D	0.90	0.25
N	7	4

Figure II-3

Mean response hierarchy scores for fifth graders by sex and teacher rating of aggressiveness in the school environment



Thus, based on the preceding work, the response hierarchy measure was judged valid enough for further use. This is not to say that further validation work, particularly among older children, is not called for. However, given:

1. that construction of the instrument was based on interviews with children ranging in age from three to sixteen;
2. that the situations and responses comprising it have a good deal of conceptual or face validity;
3. that no study invalidated the instrument;
4. that an experiment with preschoolers and a field study with fifth graders both demonstrated the discriminative power of the measure;
5. and that the exigencies of time demanded that we turn to other phases of the research;

it was decided to continue using the instrument in the studies reported in the following pages.

All subsequent administrations and scorings of the response hierarchy were quite similar to that presented in this section. Children seven or under were tested individually on the three items appropriate for younger Ss and the three items appropriate across the entire age range. Responses were in a booklet, Ss pointed to the picture representing their choice, and E recorded the choice. Older Ss worked in groups on the six items designed for them (three appropriate for older children and three appropriate across the entire age range), viewing slides of the response alternatives and circling the letter representing their choice. Instructions were minimally altered to take account of differences in experimental procedures and surroundings.

Mean choices of physical, verbal, and physical plus verbal aggression were computed for each S. Many of the subsequent analyses

revealed high correlations between physical or verbal aggression and physical plus verbal aggression, as one would expect, and also between physical and verbal aggression. Because of this, and because physical and verbal aggression scores could not be independent, most of the analyses to be reported in succeeding sections will be for physical aggression only.

SECTION III

UNDERSTANDING OF CONTEMPORARY PROGRAMS

The work reported in this section was designed primarily to chart changes with age in understanding the motivations for and consequences of violent acts in current television programs. In addition, children's evaluations of characters and actions portrayed in these programs were assessed. Originally, the effects of justified/unjustified aggression and good/bad consequences for aggression were to be studied also. However, because contemporary television programs do not present a uniform set of motives or consequences for aggressive acts, clear prediction of effects of exposure to different types of programs was not possible. Because of these difficulties the study reported here was followed by further work (see Section IV) in which videotapes of current programs were edited to produce the desired uniform set of motivations and consequences. However, in order to provide exploratory data, the tendency to aggress was measured in this first study after exposure to the unedited videotape and administration of the understanding measure.

This section, then, describes selection of television programs and construction of comprehension and evaluation tests, administration and analysis of the comprehension and evaluation tests, and analysis of the exploratory response hierarchy data.

The theoretical and experimental rationale for the comprehension study has already been presented in Section I. It suggested the following hypotheses:

1. Understanding of the motivations for and consequences of television-mediated violence will increase with age.

2. Younger children will understand consequences better than motivations, but this difference in understanding will decrease with age.

3. With increasing age, evaluation of the motivations and consequences for violent acts will approximate that of adults within the surrounding communities.

METHOD

Stimuli

Six half-hour television programs, including commercials, were recorded on black and white videotape. The programs were selected for their clarity of presentation, interest, and violence from tapes of fifteen different programs. Each program contained numerous incidents of violence, both justified and unjustified, with both good and bad consequences. Table III-1 presents the programs employed.

Insert Table III-1 about here

Programs were classified into three types which appeal to and are typically viewed by children of different ages (cf. Schramm, Lyle, and Parker, 1961). Presumably they would be understood by the age groups for which they were designed. Adult judges from surrounding communities agreed that the two programs classed as primarily for young children were appropriate for children from 4 or 5 years of age on, that the westerns were appropriate for children from 10 to 12 on, and that the crime programs were appropriate for teenagers. It should be noted, however, that a

Table III-1

Characteristics of Programs
(Including Program Type, Program, Number Violent Episodes, Percent of Viewers Listing Each Episode, Episodes Where Receiver was Violent, and Episodes Included in Understanding Test)

	Children's Programs		Western Programs		Crime Programs	
Violent Episodes (In temporal order)	Rocket Robin Hood % Rate	Batman % Rate	Rifleman % Rate	Have Gun % Rate	Adam 12 % Rate	Felony Squad % Rate
1	39*	[65]	15	[92]	[92]	[79]*
2	43	[82]	32	38	33	[60]*
3	21	[94]*	2*	[92]*	[53]	[70]*
4	43	[82]*	[55]	8	3	[84]*
5	39	[71]*	30	53*	25	[88]*
6	[54]	6	[47]	69	39	54
7	29		[47]*	[100]	[56]	3
8	[89]*		13	69*	[64]	25
9	[54]		30	8		[60]*
10	[54]		30	[92]*		55*
11	25		[40]*	69		[48]*
12	36		4	53*		
13			30*	30		
14			26*	61*		
15			[36]*			
16			17*			
17			6*			

[ ] Included in primary set of questions

[ ] Included in secondary set of questions

* Receiver responded violently

substantial proportion of the adult judges felt the programs were not appropriate for children of any age, even though they were judged typical of what was available on television.

Construction of the understanding test

Each program was viewed by adults from nearby communities. They were members of PTAs, church groups, recreational groups, and similar organizations. Given the demographics of their communities, their judgments are probably representative of a middle class view of what constitutes violence, the morality of it, and the desirability of its consequences.

The information and evaluation questionnaire was similar to parts of those used by Gerbner (1969) in his content analysis of contemporary television programs. The following information was requested: list of all violent episodes in the program, initiator and receiver of violence in each episode, violence of receiver's response, justifiability of each violent act, "goodness" of the immediate and final consequences for each participant in the violence, and a charcter evaluation of both initiator and receiver of violence. Ss were also asked to give a general, overall rating of the program for the "goodness" of the motivations and of the consequences. Finally, as previously noted, they were asked how typical the program was, the age child for which it was appropriate, and to give any other comments they wished. Appendix A-III contains the questionnaire and the various definitions given to all Ss.

Ratings were analyzed separately for each episode. From Table III-1, which presents the proportion of adults who rated each episode as violent and the perceived violence of the receiver's response to the

initial aggression, it is apparent that the programs differed considerably in the frequency and clarity of violent episodes and in whether or not the receiver's response was violent. Variability in presentation of motivations, consequences, and character type will be presented when age changes in these are considered in the results section. Suffice it to say here that the variability in these evaluations is indeed great, both within and across programs.

For each program the three violent episodes listed by the greatest proportions of adult viewers were chosen for testing with all child Ss. One to four additional episodes, those rated by the next largest proportions of adults, were added when testing older children. These two sets of episodes will hereafter be referred to as primary and secondary sets, respectively. The episodes in the primary and secondary sets for each program are identified in Table III-1.

A multiple choice test was constructed utilizing the information from the adult ratings. Either three or four questions were formulated for each of the three to seven violent episodes in each program. Two questions presented the violent action and asked what the immediate consequences were for the characters identified by the adult raters as initiator and receiver. A third question asked why the violent action was performed. And a fourth asked why the receiver responded violently if he did aggress in return. Questions eliciting evaluation of the motives and consequences for each violent action as either good, bad, or in-between were also included. Finally, for each character who participated in a violent episode, either as initiator or receiver, there was a question about the final consequences for him in the program and about the goodness of his character.

Each multiple choice question contained four alternatives. All alternatives represented information presented in the program either visually or verbally or both. Two of the alternatives were judged to be good consequences or motives and two bad. The order of presentation of the alternatives for each question was randomized, and the questions for all episodes combined and randomized. When adults who had not seen a program took the test for it, their scores ranged from 20% to 37% correct, with four of the six programs under 30%. Appendix B-III contains all the questions for one violent episode and the cartoons used when testing young children on these questions.

Subjects

271 children served as Ss: 40 kindergarteners, 54 third graders, 56 sixth graders, 51 ninth graders, and 70 twelfth graders, with approximately equal numbers of boys and girls at each grade. The community in which they live is low-middle to middle class, with a substantial Chicano population. The particular schools Ss attended were from 15% to 40% Chicano. Ss within each grade and sex were randomly assigned to programs; no attempt has been made to analyze the data by ethnic group.

Procedure

Ss in the four older age groups were tested in mixed-sex groups of eight to ten by either of two female Es. Es were counterbalanced across groups, and Ss randomly assigned to programs. The situation was as informal as possible within the school environment (e.g., ordinarily

not in the regular classroom). Ss were told we were interested in what children of different ages thought about different types of television programs. They were asked to relax and view the program as they would at home, then we would ask them some questions about what they thought of it.

At the conclusion of the program, Ss answered the multiple choice questions about what they had seen. The entire test was read aloud to third graders, while older Ss worked on their own. All Ss were tested on the four to seven episodes per program, primary and secondary sets combined, shown in Table III-1.

Following the multiple choice test, all Ss were administered the response hierarchy instrument. This was presented as a separate task, the results of which we were interested in, which was given to fill up the remainder of the class session. The four older age groups saw the response alternatives on slides and circled the letter on an answer sheet that corresponded to the response they chose. The procedure was very nearly identical to that detailed in Section II.

The procedure with kindergarten Ss was the same as that for the older Ss, with the following exceptions. Children were run in mixed-sex groups of three rather than eight or ten. The four alternatives for each multiple choice question were presented with stick-figure cartoons; S pointed to his response. The alternative responses in the response hierarchy were also presented as stick-figure cartoons. Testing was done individually with one of four possible female Es.

RESULTS

Understanding

Answers to the questions about motivations for and consequences of violence in each program were scored as correct-incorrect. The number correct was computed for motivations, immediate consequences, and final consequences. Computations, performed separately for the primary and econdary sets of episodes, were converted to a percentage of the maximum possible correct for each category for each program in order to make the scores comparable across programs and across categories. Percentage scores were converted to arcsin scores prior to analysis to stabilize variance across cells (e.g., 25%=0.524; 50%=0.785; 75%=1.047, and 100%=1.539).

Figure III-1 presents age changes in understanding of the motives for violence, immediate consequences of violence, and final consequences to all characters who participated in violence over all programs combined. The data are for the primary episodes. The pattern of results with the secondary episodes for the four older groups was quite similar.

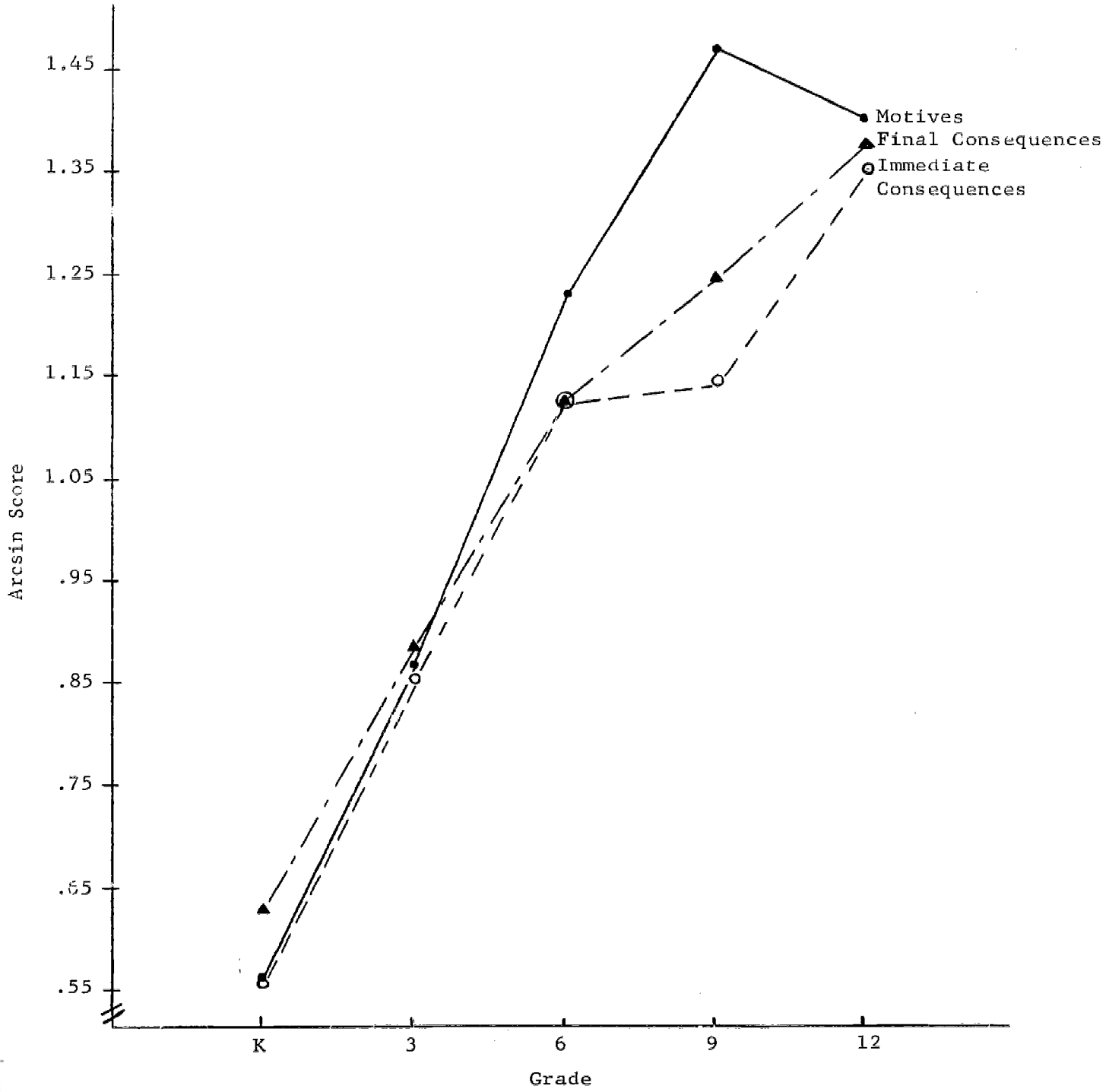
Insert Figure III-1 about here

The arcsin scores for motives, immediate consequences, and final consequences were each subjected to a nested factors analysis of variance.[1] Independent variables were grade, sex, type of program,

[1]The analysis of variance tables for this section may be found in Appendix C-III.

Figure III-1

Understanding of Motivations for and
Immediate and Final Consequences of Violence
By Grade for Three Primary Episodes



and specific program nested under program type. In order to equalize cell Ns, 91 Ss were randomly discarded until a total of three Ss per cell remained (subsequent three-way analyses of variance included all Ss and will be reported later).

In the nested factors ANOVA there is a clear and highly significant age effect for all three measures ($F=60.81$; $F=40.74$; and $F=29.13$ respectively with $df=4,120$; $p < .001$). Although an age effect was predicted, the magnitude of the age differences found is still striking. Kindergarteners could answer only about one-third of the questions about either motives or consequences, third graders only about one-half, and twelfth graders about 95%. Hence, the younger Ss, by our measures, are not taking in, or not retaining, much of the information about motives and consequences in a television program.

There is general, continued improvement in learning motives and consequences through the twelfth grade. This is reflected in a highly significant linear trend for grade for each measure ($F=217.45$; $f=153.11$; and $F=113.01$ respectively, with $df=1,120$; $p < .001$). A much smaller, but significant, portion of the variance attributable to age in understanding of motivations and of immediate consequences is accounted for by a quadratic trend ($F=13.01$; $df=1,120$; $p < .001$; $F=5.18$; $df=1,120$; $p < .05$ respectively).

There was no significant sex difference in performance on any of the three dependent variables, nor was there any significant effect for <u>type</u> of program. There was a significant effect for programs for both motivations and final consequences ($F=3.81$; $df=3,120$; $p < .05$; $F=9.25$; $df=3,120$; $p < .01$ respectively) These results are apparent

in Figures III-2, III-3, and III-4 which present arcsin scores by grade and program for motivations, immediate consequences, and final consequences, respectively. The only significant interaction term in any of the analyses was a grade by program interaction for understanding of motivations ($F=2.47$; $df=12,120$; $p < .01$). The exact interpretation of this interaction is not clear, but Figure III-2 indicates that it is probably due to the age pattern for understanding Batman, and perhaps Rocket Robinhood, which is different from that for the other programs.

Insert Figures III-2, III-3, and III-4 about here

The additional one to four episodes (secondary set) that Ss from third, sixth, ninth, and twelfth grades responded to were subjected to analyses identical to those just reported. The same increases with age in understanding were found, although the effect is quite weak for immediate consequences ($F=15.56$; $df=3,96$; $p < .001$; $F=2.21$; $df=3,96$; $p < .10$; $F=9.84$; $df=3,96$; $p < .001$ respectively). The linear trend for grade was also significant for each of the three dependent variables ($F=34.35$; $df=1,96$; $p < .001$; $F=5.02$; $df=1,96$; $p < .05$; $F=24.17$; $df=1,96$; $p < .001$). There remains a significant quadratic trend ($F=5.95$; $df=1,96$; $p < .05$) and a significant residual ($F=6.36$; $df=1,91$; $p < .05$) for understanding motivations.

Again there was no significant effect of sex in any of the analyses. However, there were significant effects of program type for immediate and final consequences ($F=8.91$ and $F=5.06$ with $df=2,96$; $p < .01$). For immediate consequences the order from most to least understood was westerns, crime, and children's programs. For final consequences it was children's programs, crime programs, and westerns.

Figure III-2

Understanding of Motivations for Violence
By Grade and Program for Three Primary Episodes

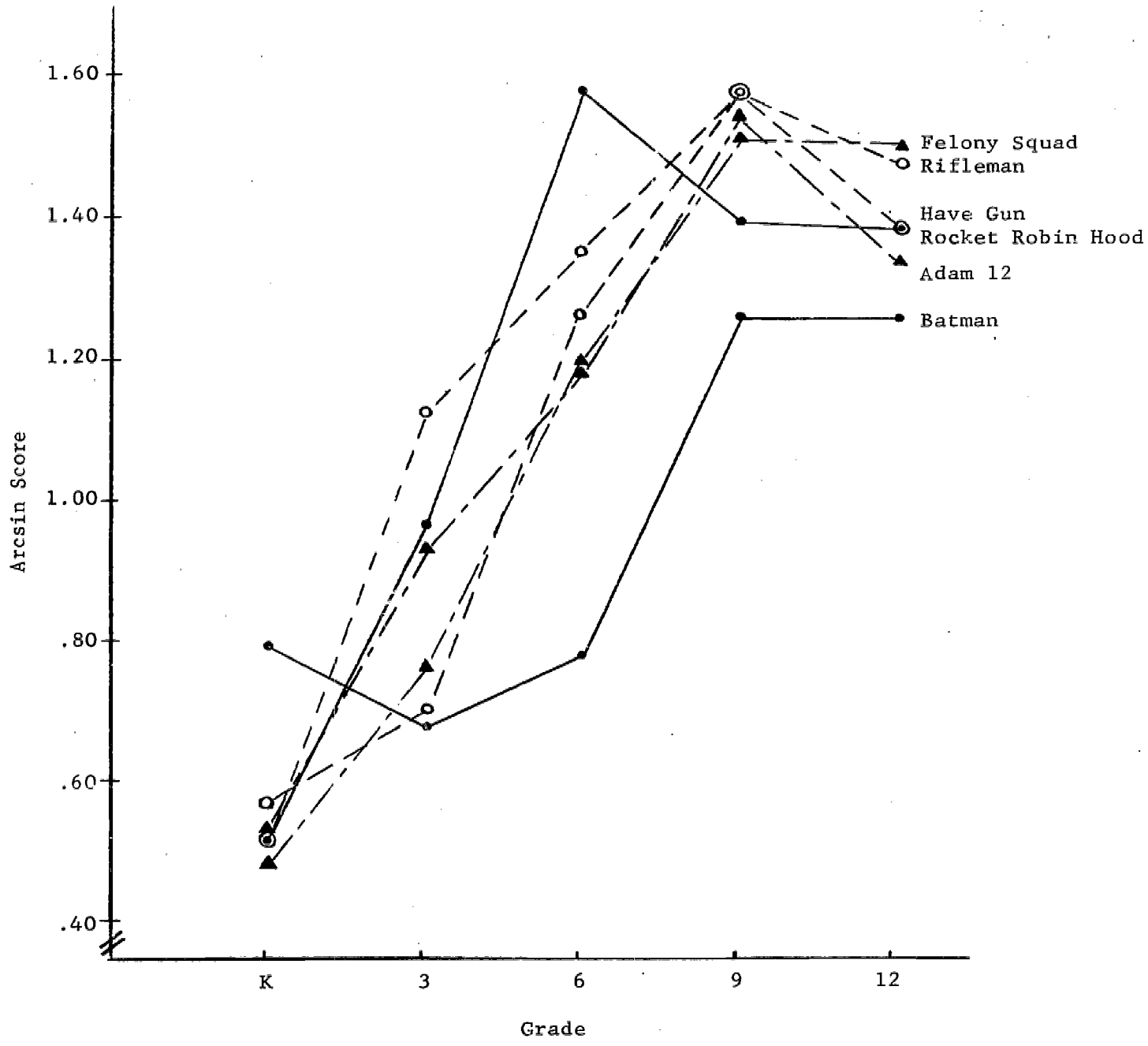


Figure III-3

Understanding of Immediate Conseque ces of Violence
By Grade and Program for Three Primary Episodes

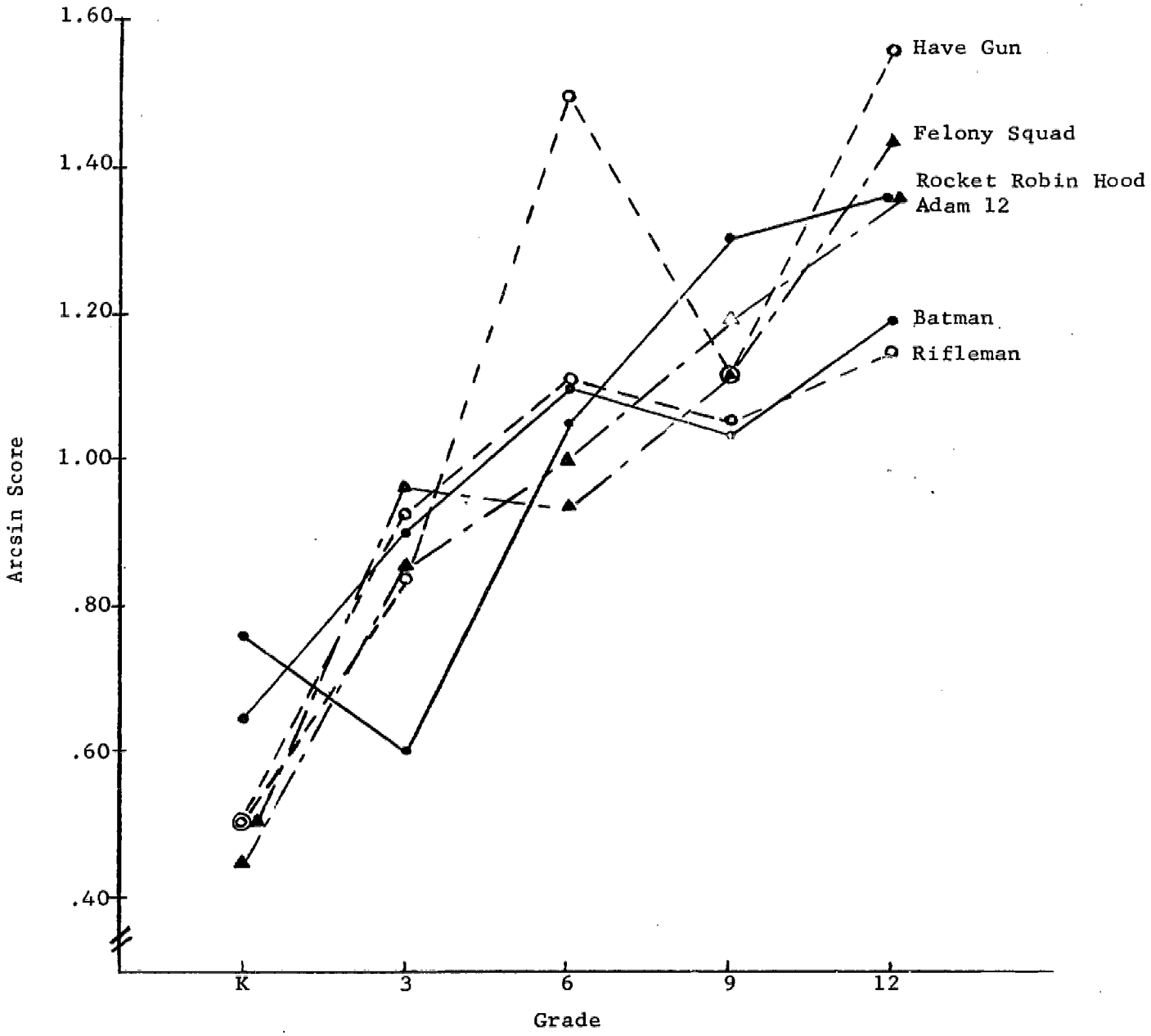
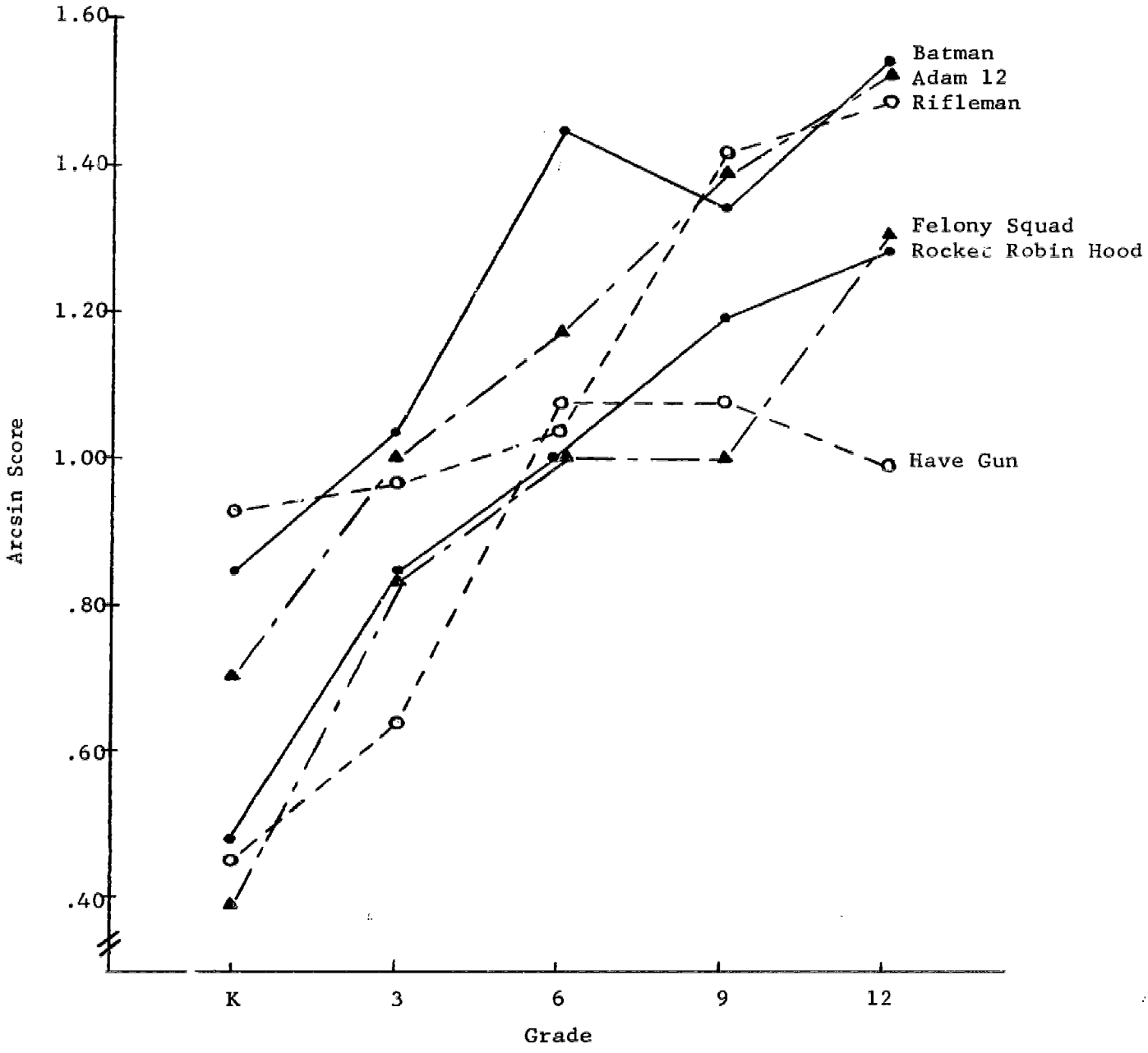


Figure III-4

Understanding of Final Consequences for Violence
By Grade and Program for Three Primary Episodes



For all three measures there was a significant effect of programs ($F=4.26$, $F=7.11$, and $F=4.71$ with $df=3,96$ and $p < .01$ for all three). There were no significant interaction terms in the analyses of motivations and immediate consequences, but there were two significant interactions for final consequences (for grade by program $F=2.53$; $df=9,96$; $p < .05$: for grade by sex by program type $F=2.69$; $df=6,96$; $p < .05$). The effects are weak, significant due to the large number of degrees of freedom, and largely uninterpretable. In summary, the analyses of the additional episodes tested with older Ss largely confirm the results reported for three episodes tested with all Ss.

Additional three-way ANOVAs for unequal Ns[2] were performed to be certain that the results reported above remained when all Ss were included. Two analyses were performed for each of the three dependent variables: grade by sex by program and grade by sex by program type. The results will not be reported in detail here since they largely repeat those already reported.

For all three measures there was a highly significant effect for grade, and again the linear trend was highly significant. There was a significant effect for programs for motivations and for final consequences, but not for immediate consequences. Program type was significant when it was the third independent variable in the analyses of motivations and final consequences. However, this result is probably largely due to differences in the programs since these

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[2]Unless otherwise noted, all analyses of variance hereafter reported were for unequal Ns.

differences are not separately accounted for in the three way ANOVAs as they are in the nested factors ANOVAs. Thus, one may probably conclude that the results reported from the nested factors ANOVAs represent the data for all Ss tested.

Inspection of all data showed no differences in younger Ss' understanding of motivations and consequences. If there are any differences in such understanding they occur at the sixth and ninth grades, with motivations being better understood than consequences. Because of the visible lack of predicted results no analyses were performed to test hypothesis 2 (viz., that younger children will understand consequences better than motivations and that this difference in understanding will decrease with age).

Evaluations

Answers to the questions evaluating the character of all those who participated in violence, their motivations, the immediate consequences to them, and the final consequences to them were were scored as good, good and bad, bad, and don't know or no answer. The percentage of viewers giving each of these four ratings was calculated separately for each question in the comprehension tests by program and grade level. Character evaluations of each character who participated in the three primary episodes of violence are presented graphically in Figure III-5 by grade and program; adult ratings are included for comparison. Comparable figures for evaluation of motivations, immediate consequences, and final consequences are presented in Appendix D-III.

Insert Figure III-5 about here

Figure III-5

Character Evaluation -- Rocket Robin Hood

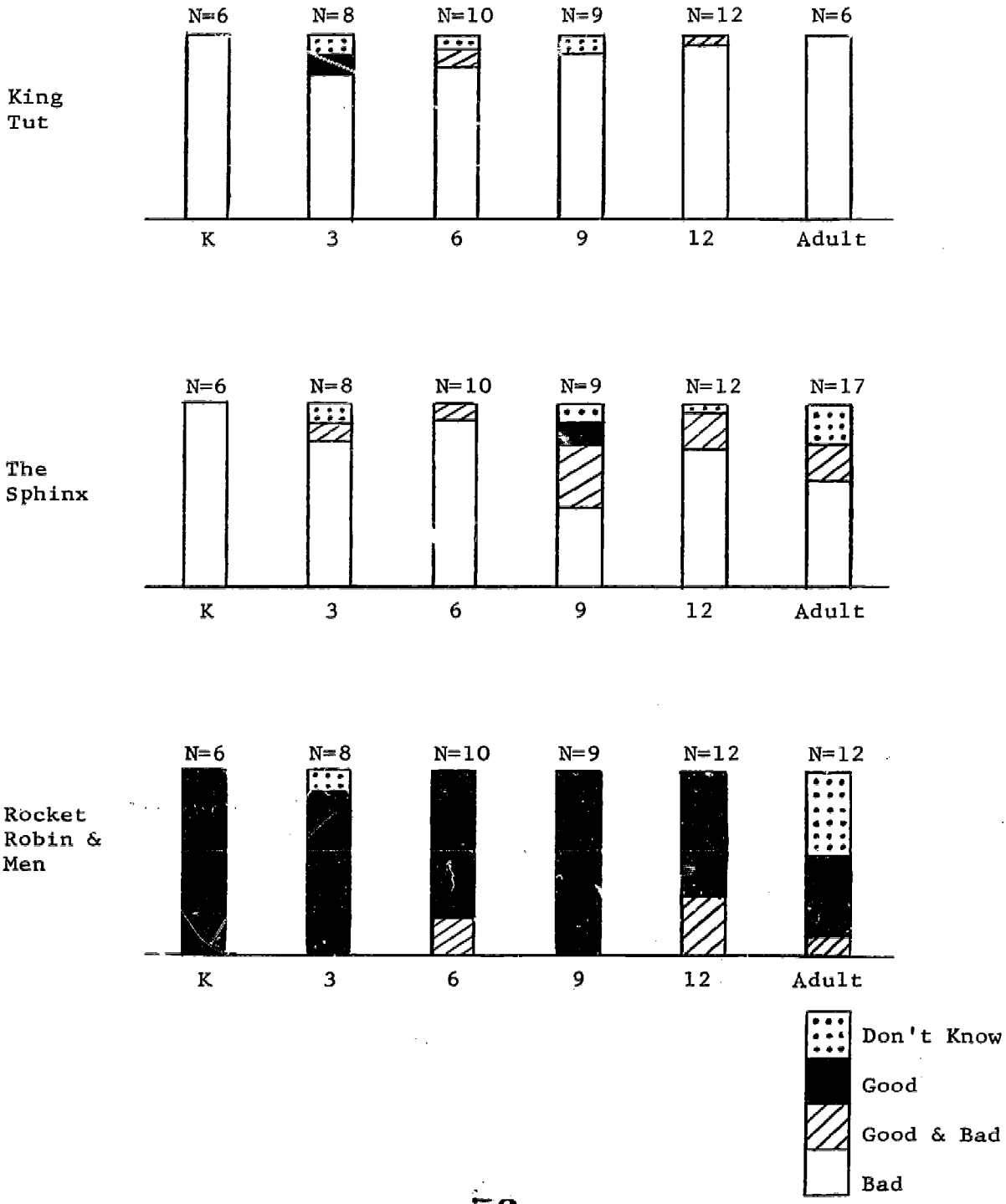


Figure III-5 (cont.)

Character Evaluation -- Batman

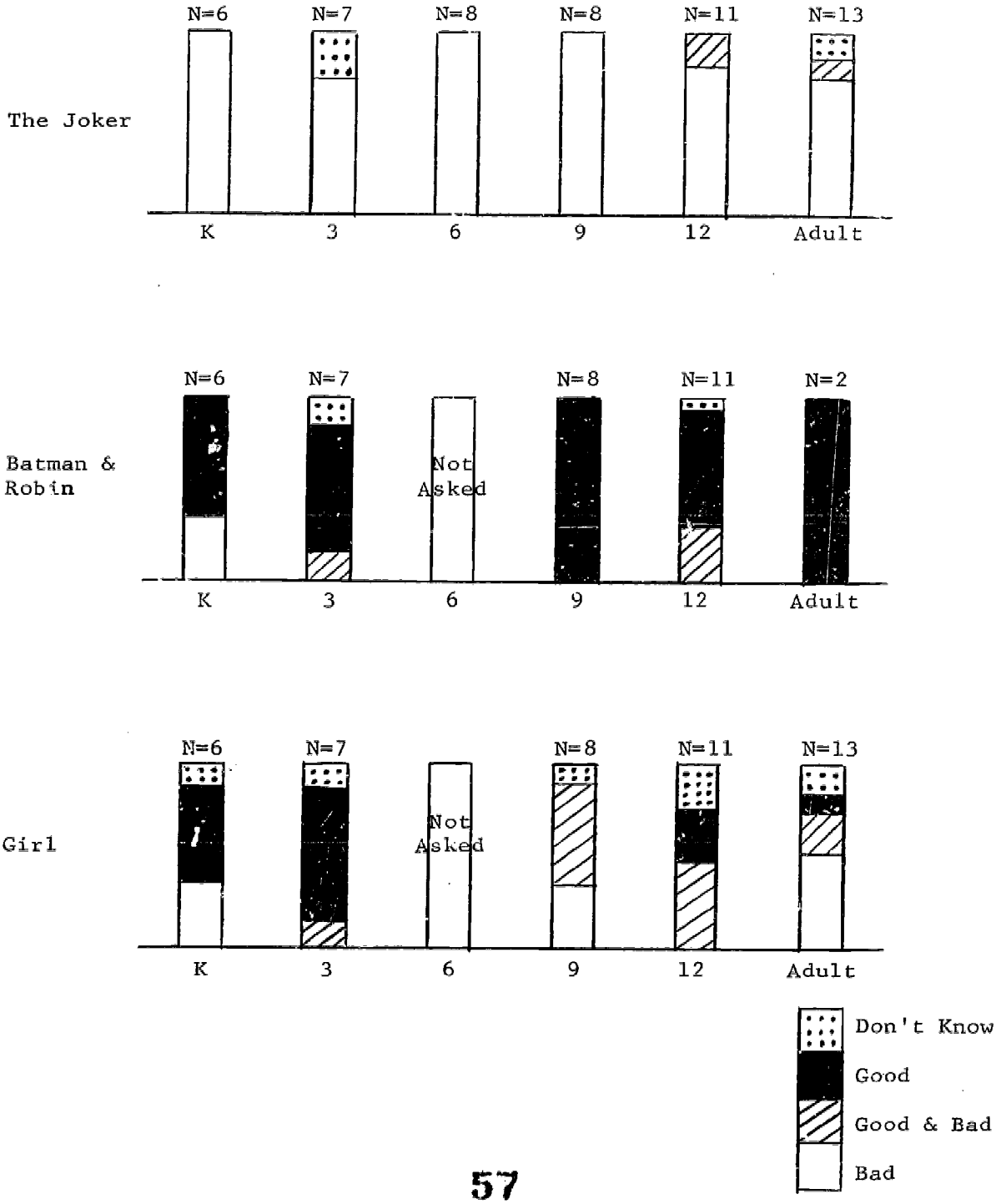


Figure III-5 (cont.)

Character Evaluation -- Rifleman

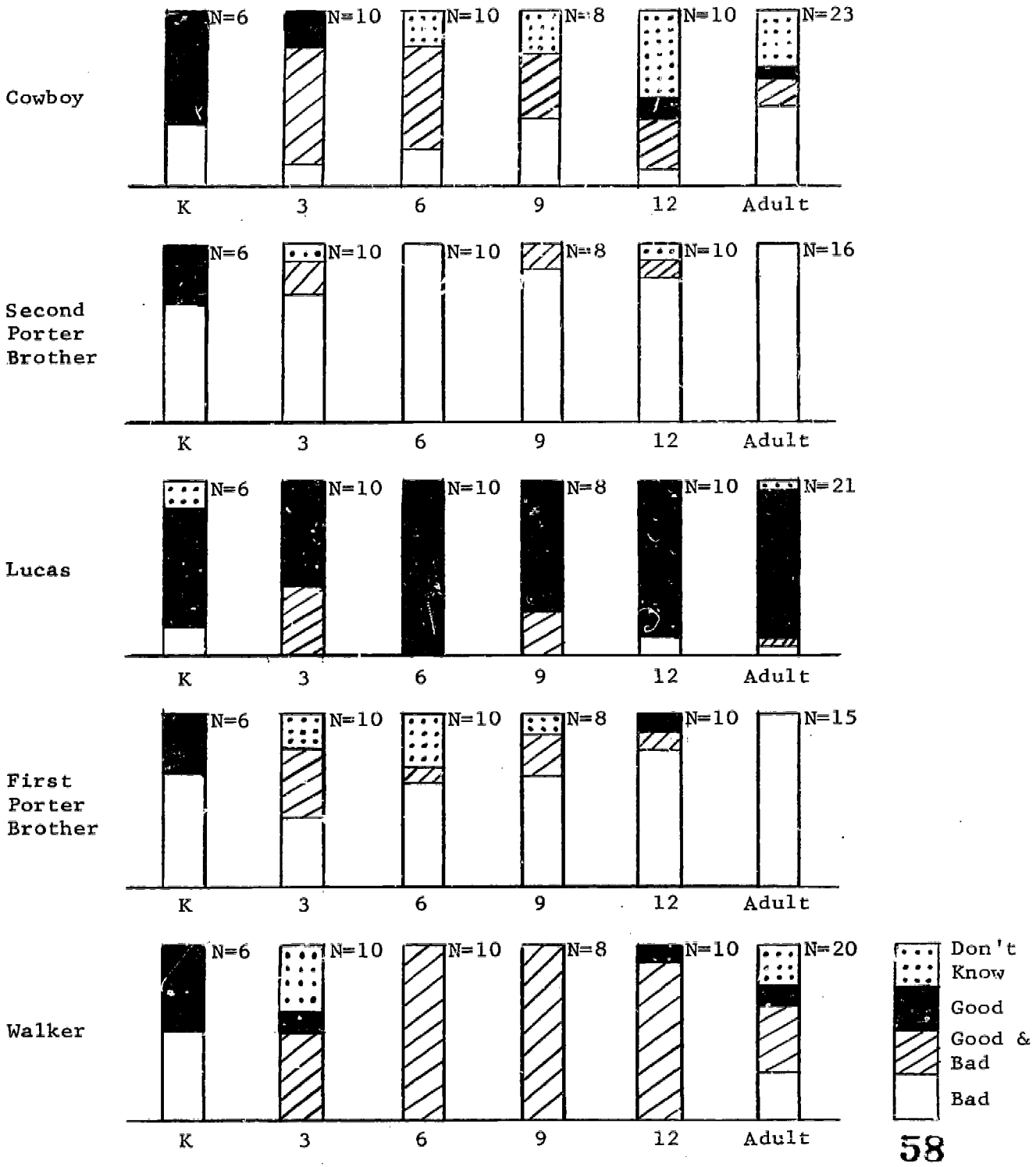


Figure III-5 (cont.)

Character Evaluation -- Have Gun

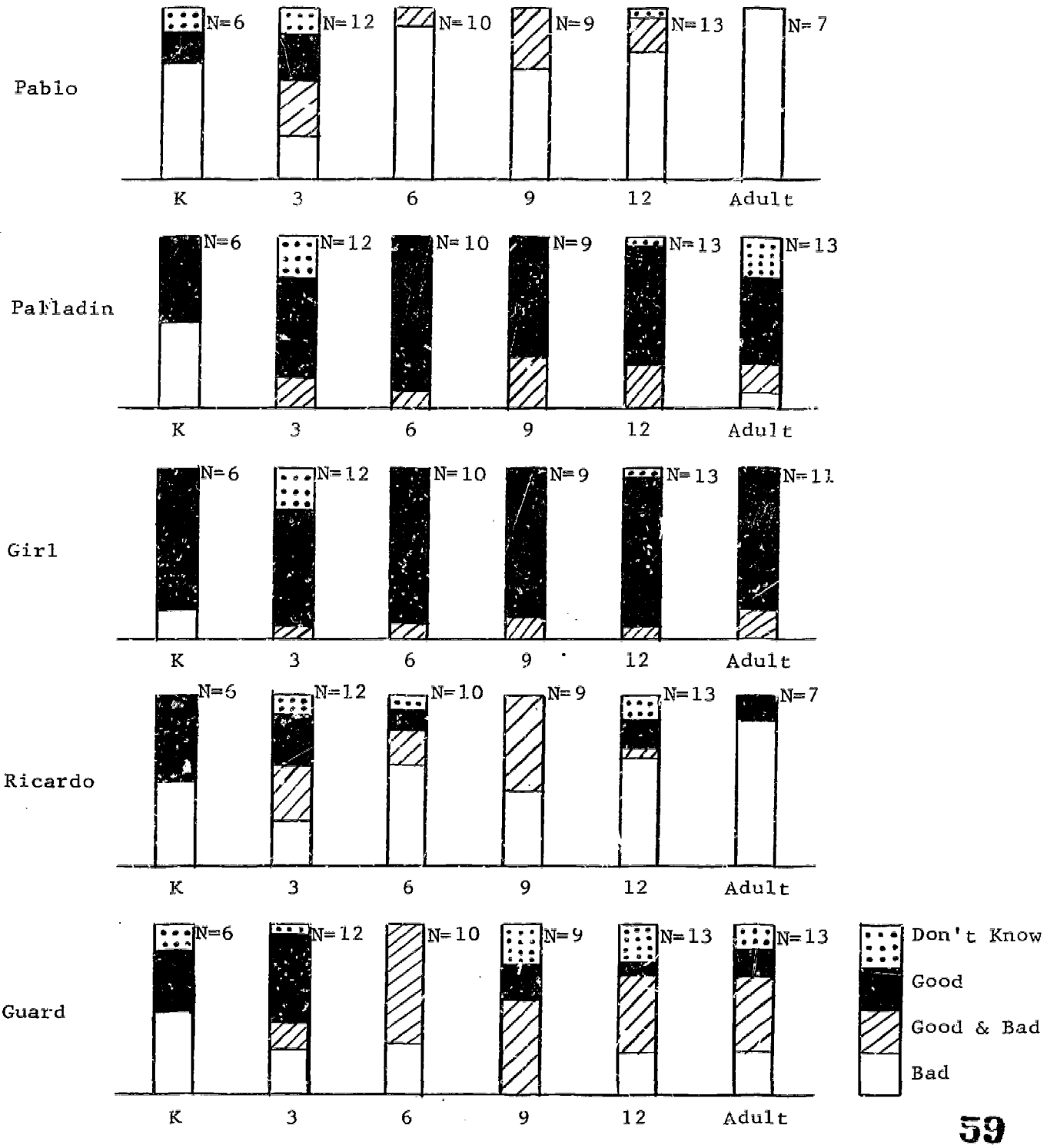


Figure III-5 (cont.)

Character Evaluation -- Adam 12

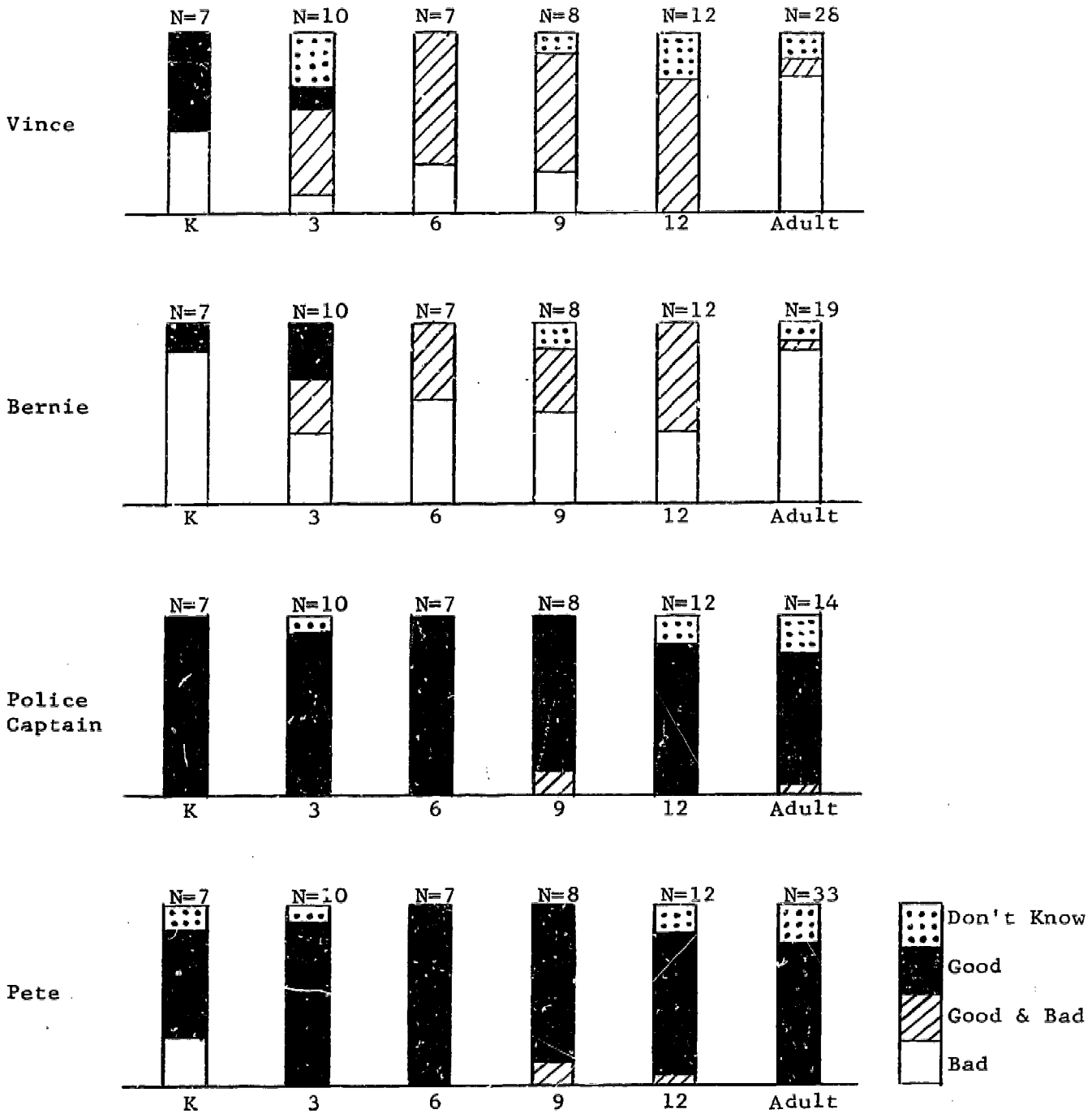
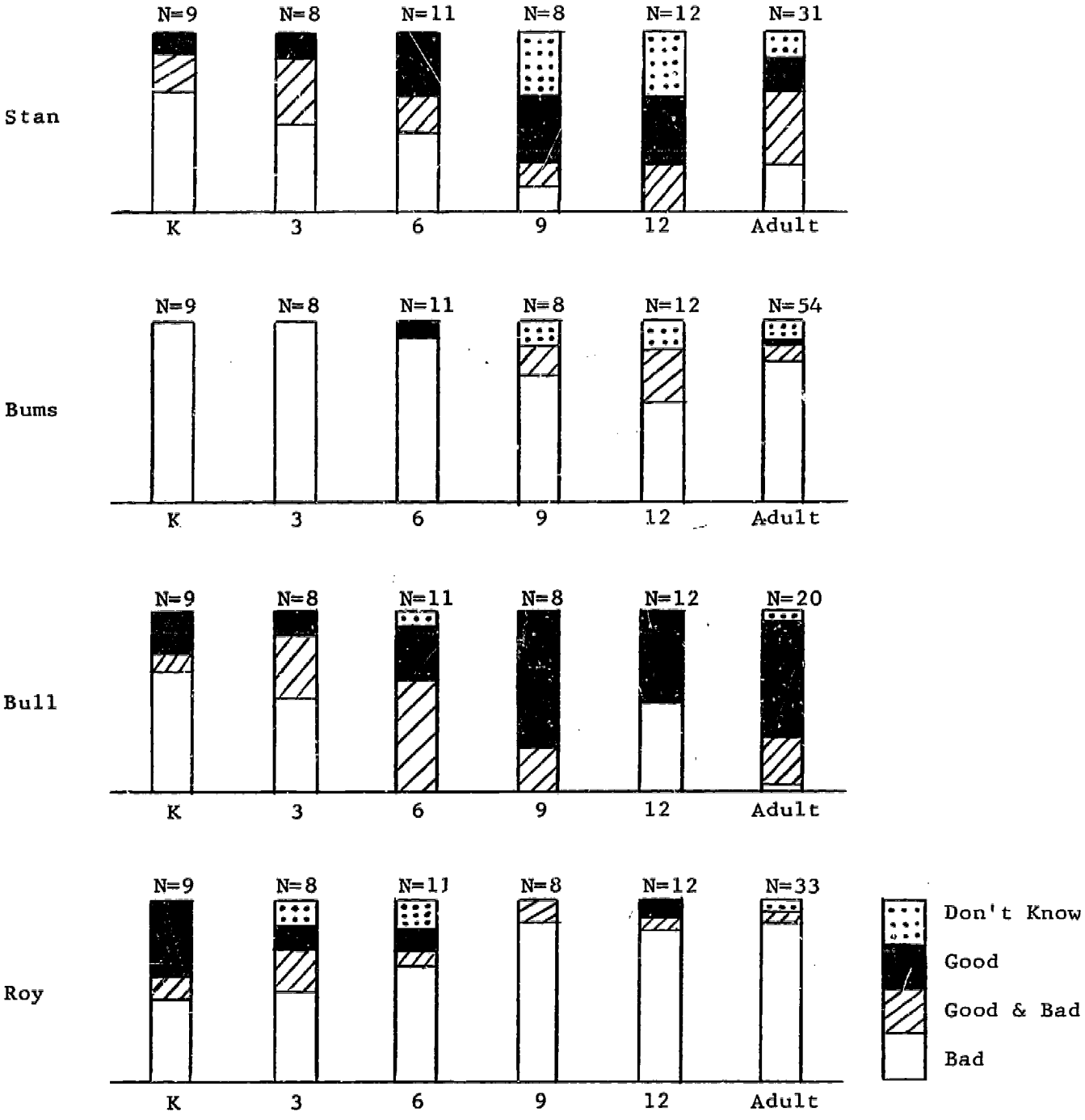


Figure III-5 (cont.)

Character Evaluation -- Felony Squad



For character evaluation, all Ss who viewed a program were included in its evaluation data set. For motivations, immediate consequences, and final consequences, only those Ss who correctly answered the relevant question about motivation or consequences were included. The data for some of the evaluations are probably not very reliable since the number of Ss upon which it is based is quite small. The N for each evaluation has been included in the figures so that the reader may make his own estimate of the stability of the data.

The evaluations of adults and kindergarteners are not directly comparable to those of third, sixth, ninth, and twelfth graders. The latter four grades were asked to choose among good, good and bad, bad, and don't know for their evaluations, while kindergarteners were asked to choose from only good or bad. If a kindergartener said he didn't know or that it was both good and bad, he was scored accordingly, but Es did not suggest such options to Ss of this age. In contrast to kindergarteners, adults were given all four ratings as options. However, their evaluations were made in the context of evaluating all violent episodes in the program and did not follow a question about the relevant program content.

Inspection of the data presented in Figure III-5 and Appendix D-III indicates that a majority of Ss at each age usually agrees with Ss at other ages in their evaluations. If the majority of the twelfth graders thought a character was bad, the majority of the kindergarteners, third, sixth, and ninth graders were also likely to think he was bad. There is not, however, a consistent trend over age in the pattern of evaluation; that is, children's evaluations as they mature do not successively and smoothly approximate those of twelfth graders or adults.

To better summarize the evaluation data over age, characters from all programs were combined and then divided into good and bad major characters and minor characters (see Figure III-5). The four sets of ratings (character, motivations, immediate consequences, and final consequences) were then tallied for each grade. Each rating was counted as a unit, so that the total N corresponded to the total number of ratings given rather than to the number of Ss giving the ratings. For each grade the percentages of all ratings that were good, bad, and good and bad were then calculated. As before all Ss were included in the data on evaluation of character, while only those Ss who correctly answered the relevant question about motivation, immediate or final consequence were included in those evaluations. The results presented here are for the primary episodes only.

Table III-2 presents percentages of evaluations of good and bad major characters and minor characters for each of the five grades; adult ratings are included for comparison purposes. There were seven good major characters, eleven bad major characters, and six minor characters included respectively in the three types of ratings. The majority of Ss at all ages agree in their evaluation of the three types of characters: the good major characters are good, the bad

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Insert Table III-2 about here

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major characters are bad, and the minor characters are diverse. Kindergarteners are more likely to be confused about a character's nature than are any of the other Ss. Fully one-third of kindergarten ratings for the good major characters were bad. By third grade this had dropped

Table III-2

Percentage of Responses for Evaluation of Character
By Grade and Character Type

	Good Major Character			Bad Major Character			Minor Character		
Rating	Bad	Good-Bad	Good	Bad	Good-Bad	Good	Bad	Good-Bad	Good
Grade									
K	34.1	2.3	63.6	70.0	1.4	28.6	53.6	4.9	41.5
3	15.9	17.5	66.7	50.0	34.9	15.1	30.8	25.0	44.2
6	0.0	17.5	82.5	71.9	26.0	2.1	41.7	33.3	25.0
9	0.0	16.7	83.3	63.2	35.6	1.1	32.5	37.5	30.0
12	8.9	16.4	74.7	66.7	29.9	3.4	21.6	39.2	39.2
Adult	3.3	12.0	84.8	86.1	10.3	3.6	59.8	23.8	16.4

to 15.9% with further decreases at older ages. 28.6% of the kindergarten ratings of the bad characters were good, with this percentage decreasing rapidly at older ages. The adult ratings are generally more polarized than the children's; however, this is probably an artifact of the differing techniques for eliciting the ratings rather than a true age difference. Testing adults with the same instruments used with children would clarify the nature of these apparent differences between child and adult responses.

The evaluations of the final consequences to the three types of characters who participated in violence are shown in Table III-3. This table was constructed similarly to the preceding table for character evaluation. Again, the majority of Ss at each age tend to agree in their evaluations of the final consequences to each character. However, there are two notable exceptions.

Insert Table III-3 about here

First, the basis upon which adults and children rated the consequences to bad characters appears not to have been the same. Adults apparently evaluated the consequences in relationship to the character, while children evaluated them in relationship to society. Thus, going to jail was a bad consequence in an adult rating and a good consequence in a child's rating -- except for kindergarteners who rated consequences to bad characters similarly to adults. Perhaps very young children are not able to take the good of society into account in providing their evaluations. These problems do not arise for good characters. They are good, the consequences to them are good,

Table III-3

Percentage of Responses for Evaluation of Final Consequences By Grade and Character Type

	Good Major Character			Bad Major Character			Minor Character		
Rating	Bad	Good-Bad	Good	Bad	Good-Bad	Good	Bad	Good-Bad	Good
Grade									
K	47.4	0.0	52.6	65.6	0.0	34.4	70.0	0.0	30.0
3	10.0	13.3	76.7	37.9	34.5	27.6	28.6	35.7	35.7
6	6.1	18.4	75.5	21.2	28.2	50.6	28.6	28.6	42.8
9	3.7	22.2	74.1	11.2	30.0	58.8	33.3	20.8	45.8
12	5.5	17.8	76.7	14.9	31.6	53.5	34.2	21.1	44.7
Adult	17.5	8.7	73.8	73.4	5.7	20.9	64.4	22.1	13.5

and their fates are good for society. Ss of all ages agree in rating the final consequence to good characters as good, although kindergarteners are less uniform in their evaluations than are older Ss.

Second, kindergarteners apparently view negatively everything associated with violence. Of their ratings for the final consequences to good major characters 47.4% were bad, while the next closest percentages were 10.0 for chird graders and 17.5 for adults. For bad major characters 65.6% of their ratings were bad, with the next closest ratings being 73.4% for adults and 37.9% for third graders. A similar pattern holds for the final consequences to minor characters. This jaundiced view of everything associated with violence is least apparent in the character evaluations (see Table III-2), becomes somewhat apparent in the evaluations of final consequences and more apparent in the two succeeding tables for evaluations of immediate consequences and motivations (Tables III-4 and III-5).

Evaluations of the immediate consequences to three types of characters are presented in Table III-4. The ratings are based upon

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Insert Table III-4 about here

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eleven instances of immediate consequences for good major characters, sixteen instances for bad major characters, and nine for minor characters. Again there is general agreement among all the children in evaluation of immediate consequences to the good and bad major characters. However, their evaluations do not agree with those of the adult raters. Most adults felt that the immediate consequences to good and bad major characters and to minor characters were bad, while children evaluated

Table III-4

Percentages of Responses for
Evaluation of Immediate Consequences
By Grade and Character Type

	Good Major Characters			Bad Major Characters			Minor Characters		
Rating	Bad	Good-Bad	Good	Bad	Good-Bad	Good	Bad	Good-Bad	Good
Grade									
K	54.8	0.0	45.2	44.4	3.7	51.9	38.9	0.0	61.1
3	21.2	26.9	51.9	16.9	19.7	63.4	47.2	19.4	33.3
6	7.2	25.3	67.5	21.2	23.2	55.6	28.9	28.9	42.2
9	12.3	24.6	63.0	23.5	18.6	57.8	41.7	22.9	35.4
12	14.0	23.4	62.6	21.0	28.0	51.0	40.6	26.6	32.8
Adult	45.2	18.1	36.7	58.6	21.2	20.3	66.0	21.8	12.2

them as good for the major characters and as confused for the minor characters. Whether this difference is due to the different techniques for eliciting evaluations or to real differences in evaluation of immediate consequences is unknown. Since the consequence which children were evaluating was written such that an evaluation of it in relationship to the character would agree with the adult evaluation, there is the suggestion of real differences in the evaluation of immediate consequences.

As with final consequences kindergarteners are more likely than older children to evaluate immediate consequences as bad for both good and bad major characters. The interpretation of this as a general displeasure with violence is tempered here by the fact that the immediate consequences for minor characters are more likely to be judged good than bad. However, the evaluations of immediate consequences for minor characters show considerable shift from age to age and probably reflect the inconclusive handling of these characters.

Further support for the assertion that kindergarteners generally disapprove of violence is found in the evaluation of motivations for all violent acts. These data are presented in Table III-5 and are based on nine motivations for good major characters, eleven for bad major characters and five for minor characters. Kindergarteners uniformly disapprove of the motivations for violent acts, whether the character is a good or bad major character or a minor character. This is in sharp contrast to older children and adults who evaluated the motivations of good major characters as generally good and of bad major characters as bad. As with character evaluation, adults are more skewed in their evaluations than are any of the child Ss.

Insert Table III-5 about here

These data on the evaluation over age of motivations for, consequences of, and characters who participate in violence demonstrate that all Ss -- except perhaps kindergarteners -- understand whether an actor or the motivation for or consequence of an action was good or bad. Even kindergarteners understand which characters are good and bad, although they are apparently more confused about the portrayal than are older children, and also appear to generally disapprove of violence. The data provide some indication that the technique used to elicit evaluations will influence the pattern of obtained evaluations and that children may identify with society in evaluating consequences to those who participate in violence rather than judging from the participant's point of view.

Finally, a few comments on the variability in presentation of motivations, consequences, and characterization among the six programs are in order. Table III-6 presents a summary of adult ratings for the three primary episodes of each program. The entries of Table III-6 are simply counts of the rating (good, good and bad, bad) chosen by the majority of adults each time a rating was asked for. For example, for Rocket Robinhood three character evaluations were requested; for one character the majority of evaluations was good while for the other two the majority was bad.

Insert Table III-6 about here

It is apparent from Table III-6 that the two children's programs present the fewest characters, all of whom are viewed

Table III-5

Percentage of Responses for Evaluation of Motivations
By Grade and Character Type

	Good Major Character			Bad Major Character			Minor Character		
Rating	Bad	Good-Bad	Good	Bad	Good-Bad	Good	Bad	Good-Bad	Good
Grade									
K	80.0	0.0	20.0	75.0	0.0	25.0	90.9	0.0	9.1
3	20.0	20.0	60.0	51.1	27.6	21.3	50.0	13.6	36.4
6	30.6	16.7	52.8	56.4	30.8	12.8	51.2	29.3	19.5
9	17.4	23.2	59.4	61.6	23.3	15.1	28.9	26.3	44.7
12	21.6	30.9	47.4	48.5	27.2	24.3	48.2	37.5	14.3
Adult	7.6	26.7	65.6	84.7	12.1	3.2	71.1	7.4	21.5

Table III-6

Summary of Adult Ratings: Number of Times Majority of Adults Rated Characters, Final Consequences, Motivations and Immediate Consequences as Good, Good and Bad, or Bad

	Children's Programs		Western Programs		Crime Programs	
	Rocket Robinhood	Batman	Rifleman	Have Gun	Adam 12	Felony Squad
Characters						
Good	1	1	1	2	2	1
Bad	2	2	3	2	2	2
Mixed	0	0	1	1	0	1
Final Consequences						
Good	1	2	1	2	2	0
Bad	2	0	3	2	2	4
Mixed	0	1	1	1	0	0
Motivations						
Good	2	2	1	2	1	1
Bad	2	2	3	2	2	4
Mixed	0	0	0	0	0	1
Immediate Consequences						
Good	3	2	2	2	2	0
Bad	3	3	1	2	2	5
Mixed	0	1	3	2	2	1

primarily as either good or bad, but not both. Their motivations for violence are either good or bad, and the consequences to them are either good or bad (except in one instance). The two westerns appear to be the most complicated of the programs. They have the largest number of characters, with both good and evil often embodied in one character. Consequences to those participating in violence are more bittersweet than consequences to characters in the other two program types. The two crime programs differ considerably from each other. Felony Squad is a program filled with bad characters whose motivations for violence are bad and for whom the consequences of violence are bad. Adam '2 is a simpler story that pits good guys against bad and distributes the motivations and consequences accordingly.

It was not the intent of this study to content analyze a set of contemporary television programs. Gerbner has supplied such data in the past (1969) and again for the body of work of which this report is one part. However, the diversity in presentation across programs, even programs of one designated type, was great in the sample of programs used here, and we wished to indicate this fact with the inclusion of Table III-6. Such diversity in presentation has implications for the results we could obtain and for the inferences one might wish to make about the effects on children of viewing contemporary television programs.

Response Hierarchy

Mean scores on the response hierarchy measure were calculated (see Section II for procedure). Analyses were performed on both physical and verbal aggression scores. However, only the results for physical aggression

will be reported since the two scores are neither conceptually nor statistically independent (r= .40 in this study).

The six stimulus programs differed in the amount of violence they presented and the portrayal of the motivations for and consequences of violence. Table III-7 presents the program characteristics as judged by the adult raters. The children's programs are the least violent and also present the best consequences for aggression. The other two types of programs are more violent, and contain more varied presentations of motivations and consequences. In general, the more violent programs were rated as presenting less good motivations (r= -.42) and consequences (r= -.64). Acceptability of the motivations and consequences within each program was relatively similar (r= .66 between

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Insert Table III-7 about here

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motivations and consequences).

Although it is apparent from Table III-7 that an independent assessment of the influence of violence, motivations and consequences on later aggression was not possible, best estimates of the influence of each of these variables, in interaction with age and understanding, follow. Figure III-6 shows the number of physical aggression responses made by Ss at each grade level for each of the six programs. In conjunction with the program characteristics (Table III-7) and the three understanding measures (Figures III-2, III-3, and III-4) they represent the data included in the analyses that follow.

Insert Figure III-6 about here

Table III-7

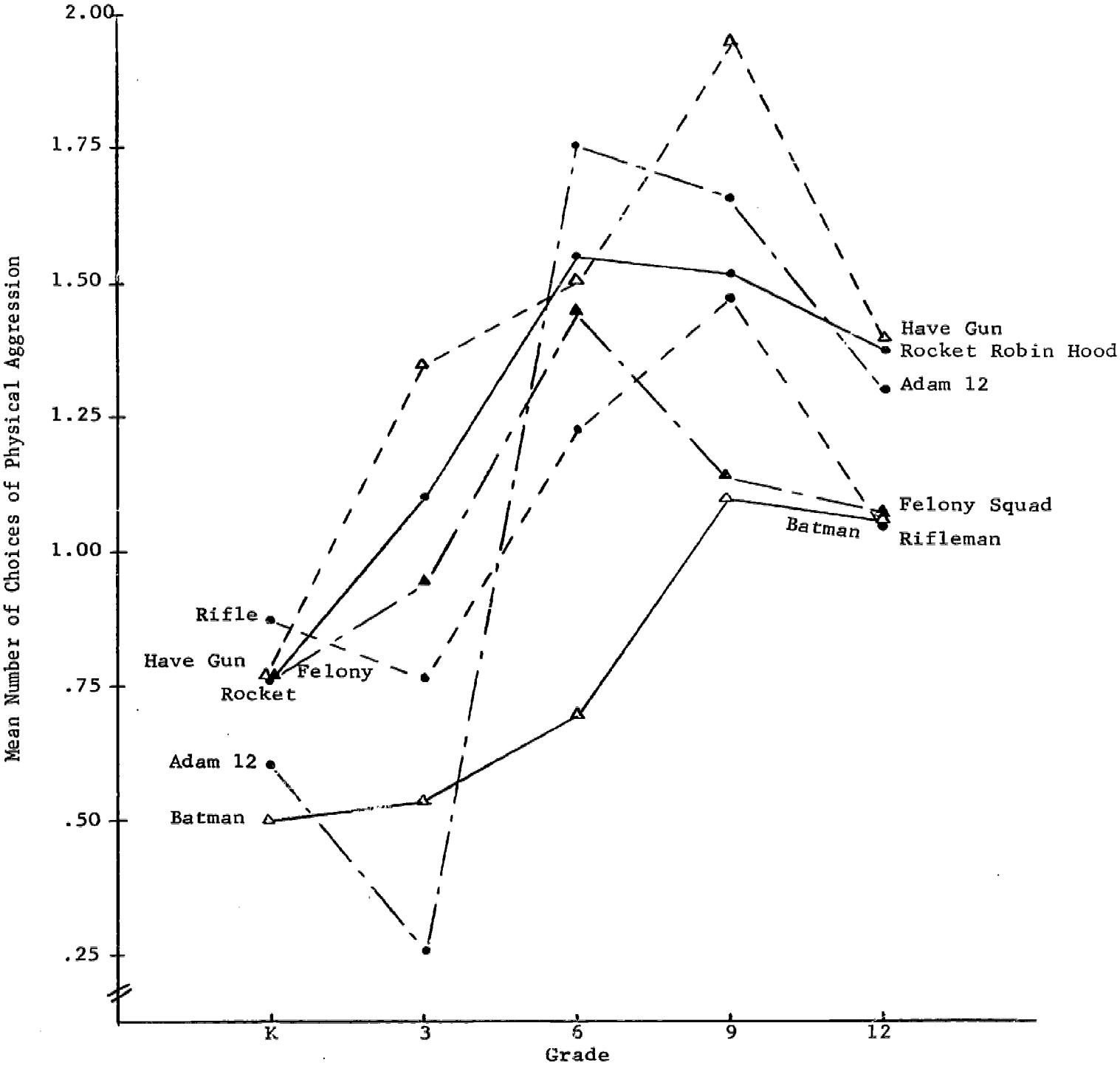
Adult Raters' Judgments of Portrayal of Amount of Violence and of Overall Motivations for and Overall Consequences of Violence in Each Television Program

	Rocket Robinhood	Batman	Rifle-Man	Have Gun	Adam 12	Felony Squad
Violence rating*	3	1	5	7	2	7
Percent raters saying motivations for violence were "good"	.26	.33	.49	.29	.38	.09
Percent raters saying consequences of violence were "good"	.46	.50	.38	.33	.28	.03

* 1 = least violence portrayed; 7 = most violence portrayed

Figure III-6

Choice of Physical Aggression Following Viewing
of Entire Television Program By Grade and Program



Our general model is that the probability of aggression following exposure to television programming at least depends upon the amount of violence in the program, the motivations for it, the consequences for it, how well the motivations are understood, and how well the consequences are understood. In order to test this model a regression analysis was performed using physical aggression as the dependent variable and the following independent variables: sex of S, grade of S, amount of violence in program, goodness of motivations for violence, goodness of final consequence of violence, understanding of motivations, understanding of immediate consequences, understanding of final consequences, and consistency-inconsistency of the response hierarchies for all six situations. In the first analysis all Ss and all programs were combined into one regression equation. In six subsequent analyses each program was analyzed separately, with sex, grade, and understanding of motivations, immediate consequences, and final consequences as the five independent variables.

The results of the regression analysis including all Ss and all programs are presented in Table III-8. Only three variables

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Insert Table III-8 about here

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contributed significantly to prediction of physical aggression. Sex is the most powerful predictor of choice of physical aggression after viewing television programs, with boys more aggressive than girls. Grade significantly predicts physical aggression; children chose more physical aggression with increasing age. Finally the amount of violence in the program a child views predicts how aggressively he will respond

Table III-8

Results of Regression Analysis

Regression Equation

$$Y = 0.53X_1 + 0.04X_2 + 0.08X_3 - 0.37X_4 + 0.76X_5 + 0.20X_6 - 0.22X_7 + 0.07X_8 + 0.03X_9 - 0.52$$

Where Y = Choice of Physical Aggression

X_1 = Sex

X_2 = Grade

X_3 = Violence

X_4 = Motivations

X_5 = Consequences

X_6 = Understanding of Motivations

X_7 = Understanding of Immediate Consequences

X_8 = Understanding of Final Consequences

X_9 = Consistency of Response Hierarchies

ANOVA Table

Source	df	MS	F
Regression	9	3.97	7.56**
Sex	1	18.26	34.45**
Grade	1	10.43	19.67**
Violence	1	3.83	7.22**
Motivations	1	0.14	
Consequences	1	1.01	
Understand Motives	1	0.85	
Understand Immediate Consequences	1	1.05	
Understand Final Consequences	1	0.16	
Consistency of Response Hierarchy	1	0.05	
Residual	1261	0.53	

** $p < .01$

after viewing it, with the more violent programs producing more aggressive responses in viewers. Neither the motivations for nor the consequences of violence, nor understanding of these variables, predicted later aggressive responses. Finally, the consistency of S's response hierarchy is not related to the amount of physical aggression he chooses.

Similar analyses were performed on each program separately to assess better the role of understanding of motivations and consequences in determining subsequent aggression. Sex and grade of Ss again predicted physical aggression. Understanding of the motivations for and consequences of violence in each program never accounted for a significant proportion of the variability in the aggression scores. The regression analyses for each program separately were performed once with all Ss and once with only those Ss who were consistent on all six items of the response hierarchy. There were no differences in the results of these two analyses.

However, it is interesting to note the differences across the six programs in percentage of Ss whose hierarchies were all consistent:

Rocket Robin Hood.....20%
Batman.....51%
Rifleman.....28%
Have Gun.....55%
Adam 12.....50%
Felony Squad.....21%

There is no obvious reason for these differences. The possibility was examined that Rocket Robin Hood, Rifleman, and Felony Squad present motivations and consequences that are not consonant with the amount of violence presented. It was not apparent, however, that the portrayals in these programs are any more confusing in their message about the desirability of physical aggression than are the portrayals of the

other programs. It is unlikely that the program differences are due to S differences since assignment to programs was random. The explanation awaits more data.

It had been predicted that the effects of exposure to different television portrayals of motivations and consequences would become more discriminable with increasing age. Such an interaction is not implied by Figure III-6, but it cannot be directly tested with regression analysis. To test for interactions between grade level and various presentation variables, three three-factor ANOVAs were performed on physical aggression scores. In all three analyses, sex and grade comprised two of the factors, with the third factor either amount of violence portrayed (low, moderate, high), or evaluation of motivations for violence (bad, moderately bad, moderately good, good), or evaluation of consequences of violence (bad, bad/good, good). Figures III-7, III-8, and III-9 chart mean physical aggression scores for each grade by each of these latter three categories.

Insert Figures III-7, III-8, and III-9 about here

The analyses in which the third factor was amount of violence portrayed revealed a significant main effect for sex ($F=32.77$; $df=1,241$; $p < .01$), with boys responding more aggressively than girls. There was also a significant effect for grade ($F=10.76$; $df=4,241$; $p < .01$), with older children generally responding more aggressively than younger children, although 12th graders failed to maintain the pattern (see Figure III-7). Finally, and most important, there was a significant main effect for amount of violence portrayed in the program, with the

Figure III-7

Choice of Physical Aggression
Following Viewing of Entire Television Program
By Grade and Amount of Violence

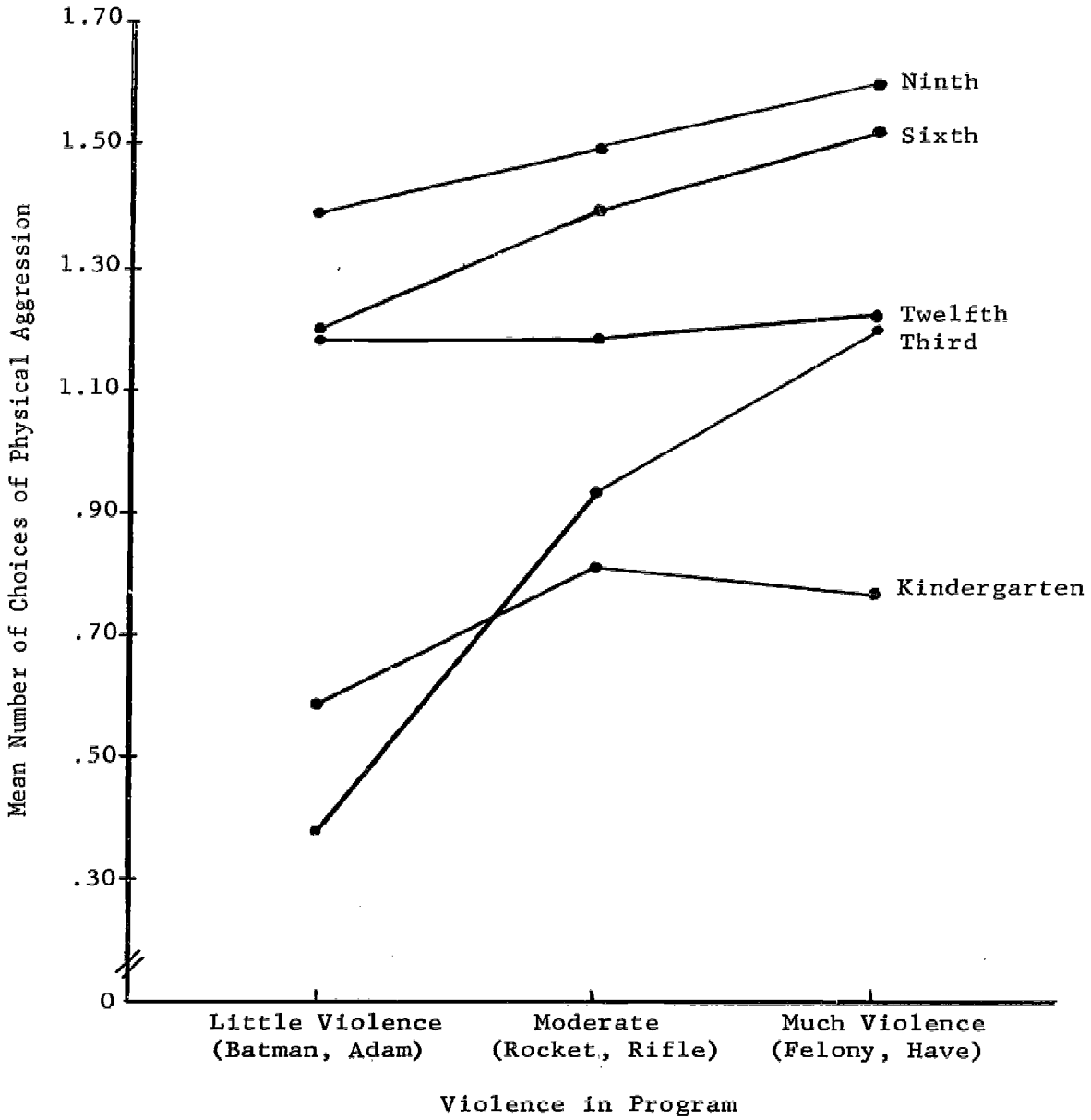


Figure III-8

Choice of Physical Aggression
Following Viewing of Entire Television Program
By Grade and Consequences for Violence

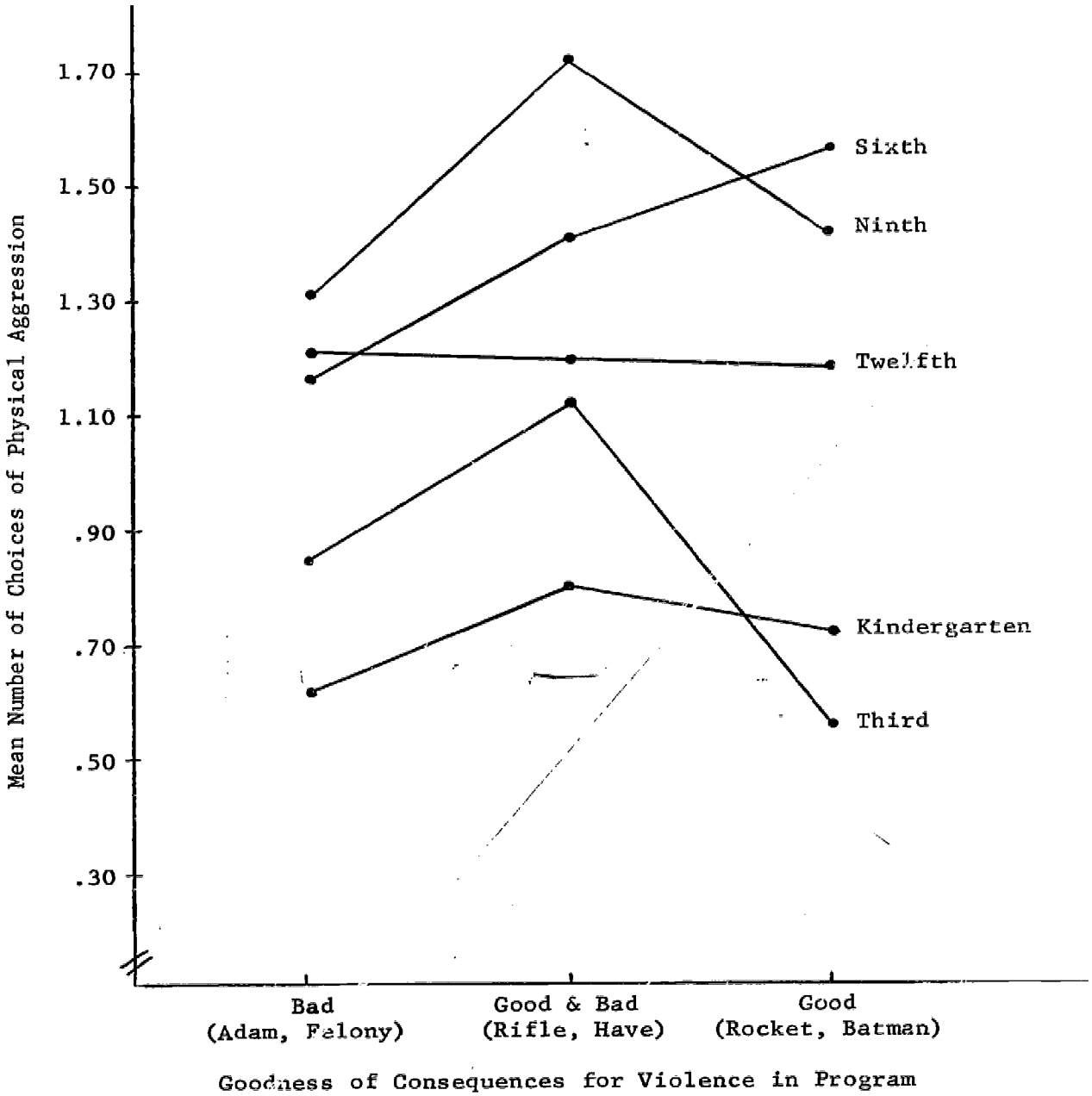
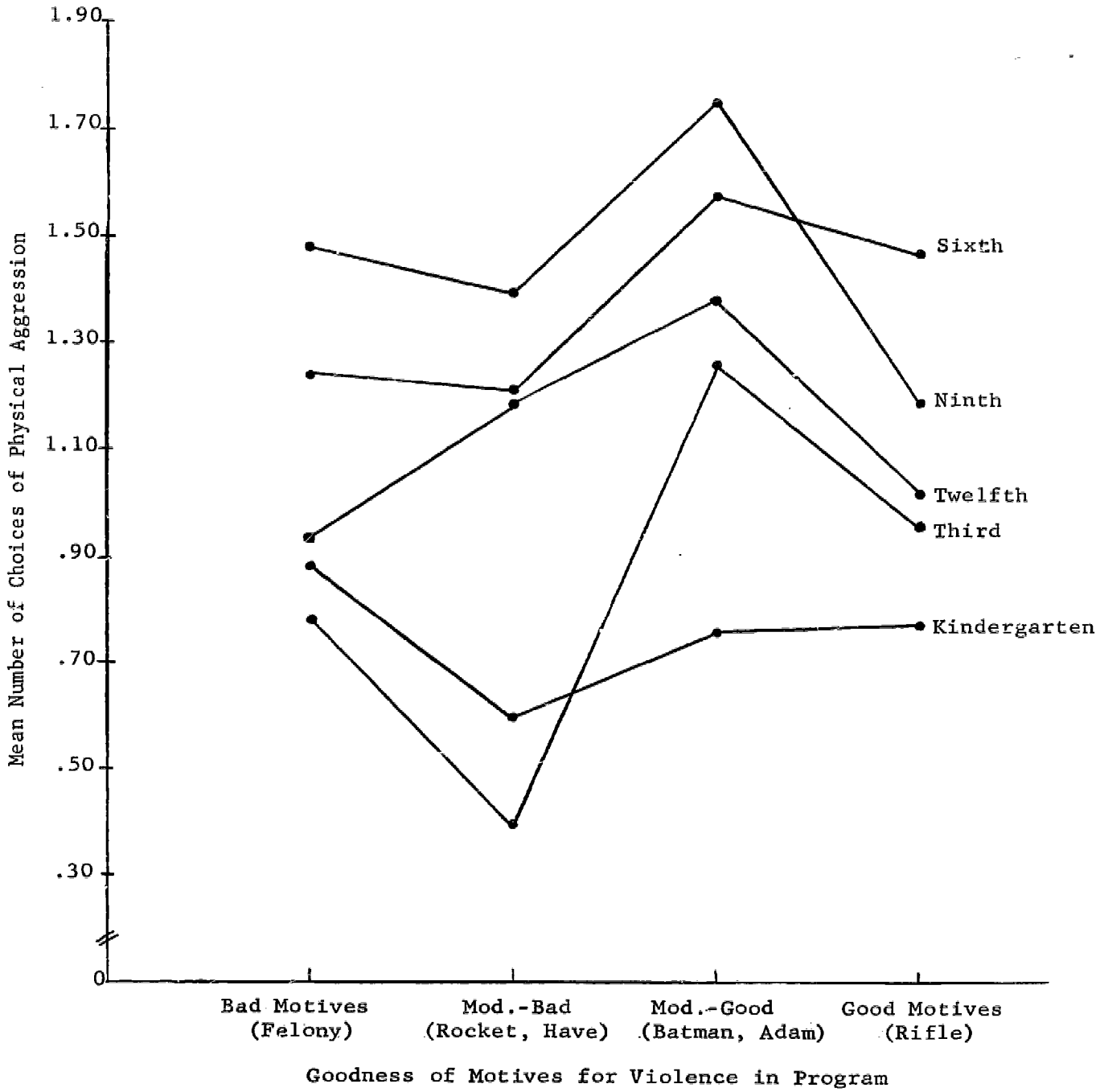


Figure III-9

Choice of Physical Aggression Following Viewing of Entire Television Program By Grade and Motivations for Violence



two most violent programs producing the most subsequent physical aggression and the two least violent programs producing the least subsequent physical aggression ($F=4.61$; $df=2,241$; $p < .05$).

In the two analyses using motivations and consequences for violence as the third factors, sex and grade are again significant as they should be since their mean square terms are the same and the error term changes only slightly. There was no main effect for consequences. There was, however, a main effect for evaluation of motivations ($F=5.58$; $df=2,231$; $p < .01$), with the order of conditions from most to least physical aggression being moderately bad, bad, good, and moderately good. Although one might wish to explain these latter results in terms of the mediating influence of portrayed motivations, they are probably most reasonably accounted for by the amount of violence in the programs rather than by the motivations themselves (see Figures III-7 and III-9).

There were no significant or nearly significant interactions in any of the three ANOVAs. This lack of significant interactions is important in that it demonstrates no statistical support for the hypothesis that the effects of violent programming will change with the child's level of development and the context within which violence is displayed.

No further analyses were performed on the response hierarchy scores. Whatever analysis was performed, the amount of violence in the program affected the amount of aggression subsequently chosen. Nothing else about the program, the context within which violence was presented, seemed to influence subsequent aggression. Furthermore, our measures of understanding of the cues hypothesized to control

aggression, motivations and consequence did not relate at all to aggression choices. These results are not encouraging in their implications; however, they should be interpreted with some caution. All children were tested on their understanding of the motivations and consequences in the programs before they were tested on the response hierarchy. This may confound the results for the response hierarchy. Work by Collins (see Section VI) suggests that such confounding might, in fact, possibly have occurred.

DISCUSSION

The study reported in this section was designed to provide information about how much is understood of the motivations for and consequences of violence in contemporary television programs. Children between kindergarten and twelfth grade were tested. Ninth and twelfth graders understood most of the motivations for violent acts and the immediate and final consequences to characters participating in violence. Kindergarteners apparently understood very little about the motivations and consequences for violence, performing at the level of chance on items dealing with motivations and immediate consequences and slightly better than chance for items about final consequences. Third and sixth graders understood a moderate amount about motivations and consequences. It is possible that the poor results with young children were due to the testing technique. Yet in pretesting it was adjudged the best of several techniques, providing children with verbal and pictorial descriptions of all answers and requiring them only to recognize the one correct alternative out of four.

Although older children understood motivations better than they understood consequences, there was no indication that younger children understood consequences better than motivations or vice versa. Whether these results are primarily determined by the clarity of presentation of the motivations and consequences in television programs or truly reflect relatively equal understanding of motivations and consequences can only be determined by further work.

The amount children understood about motivations and consequences depended heavily on the specific program being tested. Even though programs could be reliably divided into children's programs, westerns, and adult crime programs, this categorization did not predict how well any program would be understood by children of a given age. For example, kindergarteners understood quite a bit about the final consequences in three of the programs and not much about final consequences in the other three programs -- and there was one children's program, one western, and one adult crime program in each group. Also the two programs whose motivations for violence were understood best and worst were both children's programs. The lack of congruence between the apparent intended audience of a program and how well that audience actually understands the program was notable. It should cause parents and producers to ponder a minute their ability to predict what their children understand about contemporary television programs.

If the messages presented in television about the motivations for and consequences of violence are received, then the viewer's evaluations of these motivations and consequences and the characters associated with them should correspond to that intended by the program. The results

f this study suggest that this is the case. The majority of children of all ages tested tended to agree in their evaluations of characters, motivations, and consequences. These evaluations, with one exception, also usually agreed with those of adults, which were elicited under different conditions from the children's. Children did, however, tend to evaluate consequences from society's point of view while adults evaluated from the individual character's point of view.

Unfortunately, whether or not children understand the motivations for and consequences of violence does not predict the results of exposure to these motivations and consequences when they are associated with violent actions. If one measures aggression subsequent to viewing contemporary television programs containing violence, one finds that it is the amount of violence in the program, not the motivations and consequences for it, and not how much is understood about these motivations and consequences, that predicts subsequent aggression. In this instance children were given equally plausible non-aggressive or even prosocial activities that could be chosen rather than aggression, yet the more violent the program they watched, the more aggression they chose. The results suggest that these effects are strongest at third, sixth, and ninth grades, weaker at kindergarten and weakest at twelfth grade. However, there was no statistical support for the suggestion that the effects of exposure to violent television programs differ with the age of the viewer.

One might then conclude that when television violence influences subsequent choice of aggressive and prosocial actions in situations in which one is angered or annoyed, it is the amount of

violence one has been exposed to rather than the motivations for or consequences of this violence that will affect how aggressive one is. The more one has been exposed to violence, the more aggressive one is likely to be. This conclusion must, of course, be tempered by informed evaluation of the context within which these results were obtained.

SECTION IV

MOTIVATIONS AND CONSEQUENCES FOR VIOLENCE AND SUBSEQUENT AGGRESSIVE RESPONSES ACROSS AGE

The experiment reported in this section examines the role of the motivations for and consequences of violence in contemporary television programs in modifying the effects of exposure to such violence. It allows better inferences about the effects of motivations and consequences per se than were possible in the experiment reported in Section III, but in doing so sacrifices the use of entire, unedited contemporary television programs.

The experimental and theoretical rationale for the work reported in this section has already been presented (see Section I). The original hypotheses were as follows:

1. Exposure to violence committed with good motivations will elicit more frequent selection of aggressive responses in anger-provoking situations than exposure to violence committed with bad motivations.

2. Exposure to violence concluding with good consequences will elicit more frequent selection of aggressive responses in anger-provoking situations than exposure to violence concluding with bad consequences.

3. Differences in the effects of exposure to violence with good and bad motivations or consequences will increase with age.

4. For young children differences in the effects of exposure to violence with good and bad consequences will be greater than they will be in the effects of exposure to violence with good and bad motivations.

The results of the work reported in Section III suggest that hypothesis 4 will not be supported. Young children did not show any evidence of understanding motivations better than consequences,

and older children understood motivations better than consequences. Hence one would predict either no differences at any age between the effects of motivations and consequences or perhaps a greater effect for motivations than consequences, especially at older ages.

However, the work reported in Section III also suggested that the motivations for and/or consequences of aggression -- and what is understood about them -- do not modify aggressive tendencies after exposure to televised aggression and the motivations and consequences associated with it. This implies that hypotheses 1, 2, and 3 would receive little support in the present study. However, due to the problems of (1) nonindependent testing of aggressive preference and understanding and (2) nonindependence of depicted aggression, motivations, and consequences, hypotheses 1, 2, and 3 were considered viable.

For subsidiary analyses a nonviolent television program was included in the experimental design. It provides some estimate of both the effect of exposure to violence regardless of the motivations and consequences associated with it and the extent to which motivations and consequences do in fact modify the effect of exposure to violence.

METHOD

Stimuli

Five different television programs were t ped off the air and edited to provide one program containing no violence and little action and four programs containing violence and action. The four violent programs

were McCloud, Mod Squad, Gunsmoke, and Silent Force[1] and respectively filled the following categories in relationship to all violent actions within the program:

good motivations -- good consequences
good motivations -- bad consequences
bad motivations -- good consequences
bad motivations -- bad consequences

The categorizations of these four tapes were agreed upon by graduate students, research assistants, and faculty, but they were not independently assessed by a group of adults from the community. The nonviolent, low active program was a Wide World of Adventure travelogue on Austria. All tapes were 20 to 30 minutes long, black and white, with all commercials removed and program titles and credits left in.

Subjects

Ss were 62 preschoolers, 40 fifth graders, and 30 twelfth graders, with about equal numbers of boys and girls at each grade. Fifth and twelfth grade Ss attended schools in a nearby community while preschoolers attended Stanford University Nursery School.

Procedure

Ss were tested twice, approximately 14 days apart for fifth and twelfth graders and 21 days apart for preschoolers. At the first session, during regular school hours, the response hierarchy (see Section II) was administered by one of three possible female Es. For fifth and twelfth

[1]For further work with Silent Force see Section VI

graders Ss were in mixed sex groups of five to ten, while preschoolers were tested individually.

The second session, also during regular school hours, was again directed by one of three possible female Es. Es were counterbalanced over groups for both the before and after test with the same E administering the response hierarchy for both the before and after tests and a different E presenting the television program. All Ss viewed the television program in mixed sex groups. Fifth and twelfth graders were tested in the same groups and preschoolers were tested individually. The two forms of the response hierarchy for older children were counterbalanced across groups for fifth and twelfth graders and the two forms for younger children were counterbalanced within groups of preschoolers. Ss were randomly assigned to conditions.

Ss were told that we were interested in what children of different ages thought about different types of television programs. They were asked to relax and view the program. Afterwards we would fill time with the response hierarchy, which they were familiar with, for both of the following reasons: (1) because we wanted the results of it to compare with the previous administration and (2) because the opinion questionnaire would be more representative of their true opinions if some time elapsed between television viewing and completion of the questionnaire. Preschoolers were not given any rationale for activities except the E's desire to know what children thought about different types of television programs. Ss then viewed one program, completed the response hierarchy, and filled out a short questionnaire about the program. The questionnaire asked for their evaluation of the motivations for and consequences of all aggressive acts within the

program, an evaluation of how violent the program was, whether they had seen this particular program or programs like it, whether it was like television they watched, and whether what they saw actually occurred in real life.

Subject Loss

The attrition rate from the before test to the after test was quite high. Table IV-1 presents the number of boys and girls tested both times for each grade and program and the number of other children who completed only the before test. There are three such children in the fifth grade, all due to absence from school on the unannounced days of testing. There are 27 such children in preschool: 18 did not return to summer session although they had preregistered for it (the before test was at the end of spring session and the after test at the beginning of summer session), 6 were not tested because their parents did not allow them to watch the type of programs we were showing, and 3 were consistently absent or resistant to testing. The 11 twelfth graders who did not show up for the after test are not easily accounted for. The after test was administered during the period of semester final examinations and many students elected to attend only those classes for which they had exams. The experiment was unannounced, so perhaps these Ss were diligently studying rather than attending the class in which the experiment was to take place.

Insert Table IV-1 about here

Table IV-1

Number of Subjects Begun and Completed
By Sex, Grade, Aggressive Content, and Depicted Motivations
and Consequences for Aggression

		Before and After Test					Before Test Only
		Aggressive Content				Nonaggressive Content	
Motivations / Consequences		Good / Good	Good / Bad	Bad / Good	Bad / Bad	-- / --	
Preschool	Girls	3	3	3	3	3	16
	Boys	5	3	3	5	4	11
	Total	8	6	6	8	7	27
Fifth	Girls	5	6*	4	2	5*	2
	Boys	4	2	3	4	2	1
	Total	9	8	7	6	7	3
Twelfth	Girls	3	1	3	2	3	4
	Boys	0	3	2	0	2	7
	Total	3	4	5	2	5	11

* Includes one girl who was angry about missing P.E. to participate in the experiment and whose change score was considerably greater than any other S's. This girl was excluded from all data analyses.

RESULTS

The analyses for this study were carried out primarily with the preschoolers and fifth graders, since data were available for only a few twelfth graders. Where appropriate in tables and figures, the data for the twelfth graders have been included to give an indication of the probable direction of the results if more Ss were run. However, all results should be interpreted with some caution since even the number of preschool and fifth grade Ss in each cell is small.

Scores on the two questions about the motivations for and consequences of aggression in each of the programs were analyzed to test the success of the motivation and consequence manipulations. Mean scores on these questions, presented in Table IV-2 and graphed in Figures IV-1 and IV-2, indicate that the manipulations were only partially successful. Preschoolers apparently understood the motivations and not the consequences, fifth graders the consequences and not the motivations, and twelfth graders both motivations and consequences.

Insert Table IV-2, Figure IV-1, and Figure IV-2 about here

Preschool and fifth grade Ss' scores on the motivations and consequences questions were analyzed in three-way ANOVAs (grade by depiction of motivation by depiction of consequence).[2] In both analyses there was a

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[2]The analysis of variance tables for this section may be found in Appendix A-IV.

Table IV-2

Evaluation of Perceived Motivations and Consequences
By Good-Bad Depiction and Grade*

A. Perceived Motivations

			Portrayed Motivations	
			Good	Bad
Grade	Preschool	$\bar{x}$	3.57	4.00
		sd	1.92	1.65
		N	14	14
	Fifth	$\bar{x}$	2.38	2.38
		sd	1.22	1.00
		N	16	13
	Twelfth	$\bar{x}$	2.71	3.43
		sd	1.03	0.90
		N	7	7

* Larger number equals worse motivations

B. Perceived Consequences

			Portrayed Consequences	
			Good	Bad
Grade	Preschool	$\bar{x}$	4.29	3.29
		sd	1.44	1.98
		N	14	14
	Fifth	$\bar{x}$	2.81	3.08
		sd	0.81	1.09
		N	16	13
	Twelfth	$\bar{x}$	3.38	4.33
		sd	1.22	0.75
		N	8	6

* Larger number equals worse consequences

Figure IV-1

Evaluation of Perceived Motivations for Violence By
Depiction of Motivations and Consequences and Grade Level

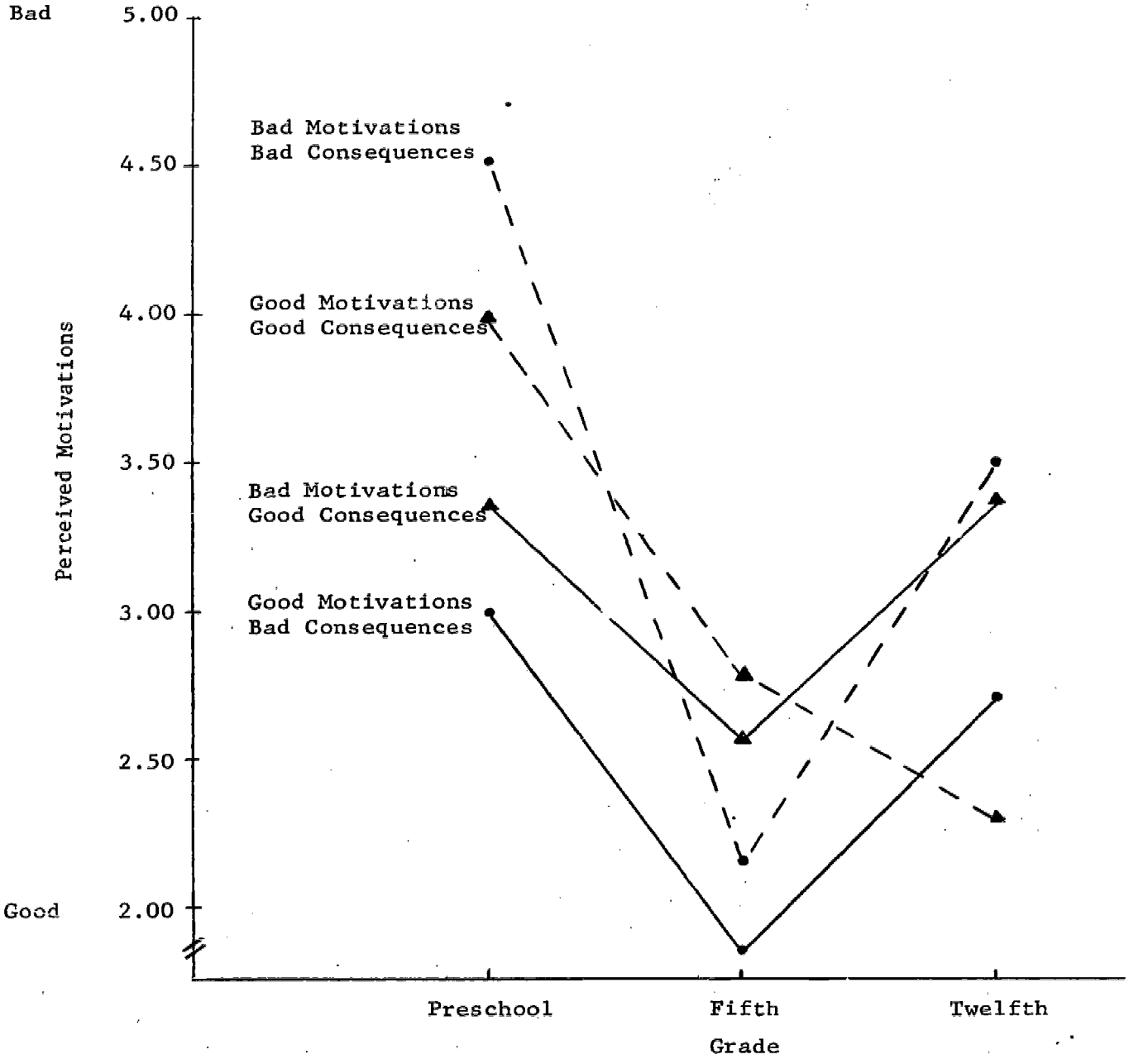
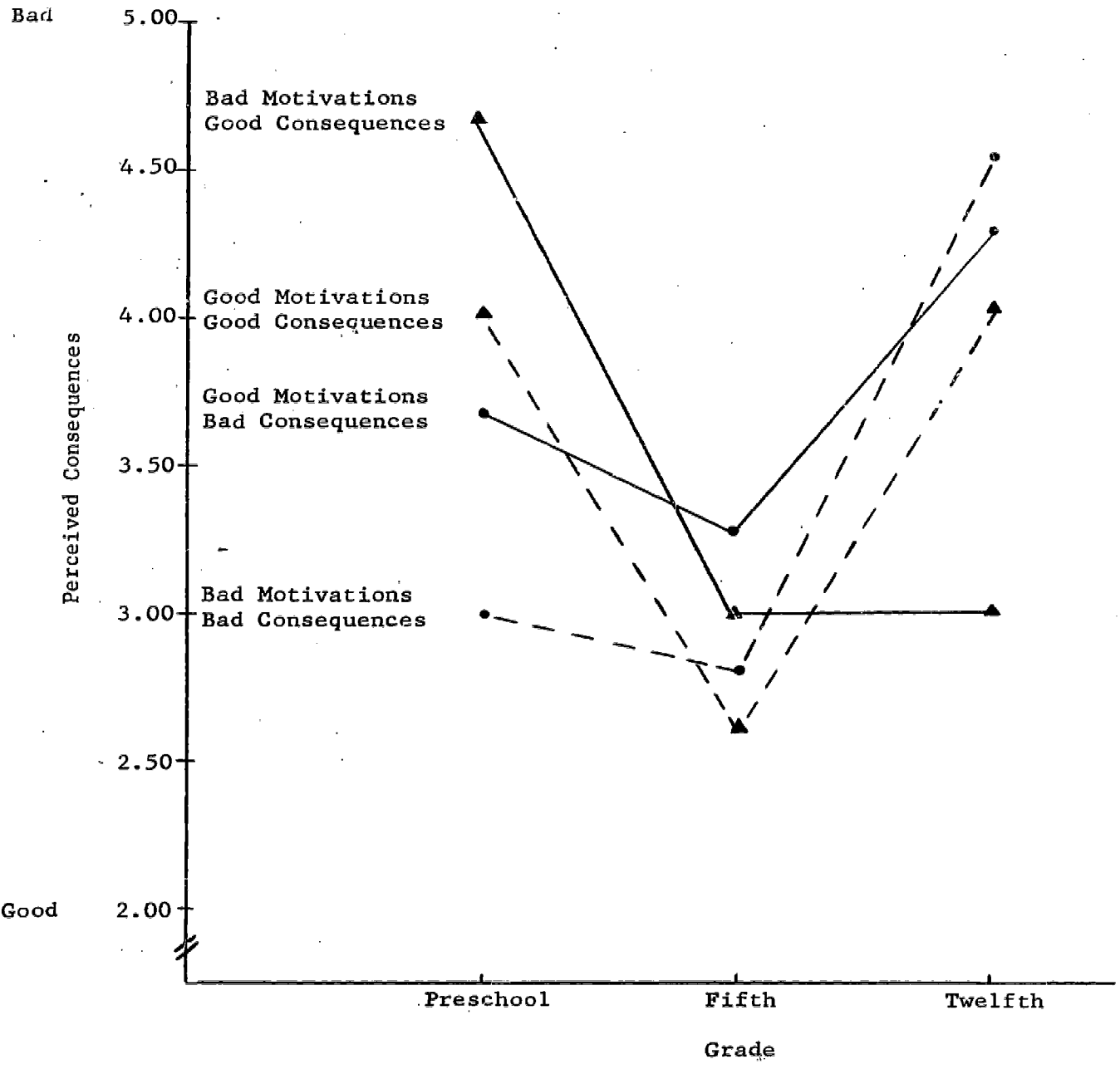


Figure IV-2

Evaluation of Perceived Consequences of Violence by
Depiction of Motivations and Consequences and Grade Level



significant effect for grade ($F=12.08$; $df=1,49$; $p < .01$ for evaluation of motivation and $F=4.77$; $df=1,49$; $p < .05$ for evaluation of consequences) with fifth graders considering both motivations and consequences to be better than preschoolers did. There were no other significant main or interaction effects in either analysis, suggesting, among other things, that the motivation and consequence manipulations were not successful for all Ss or for Ss of any one age.

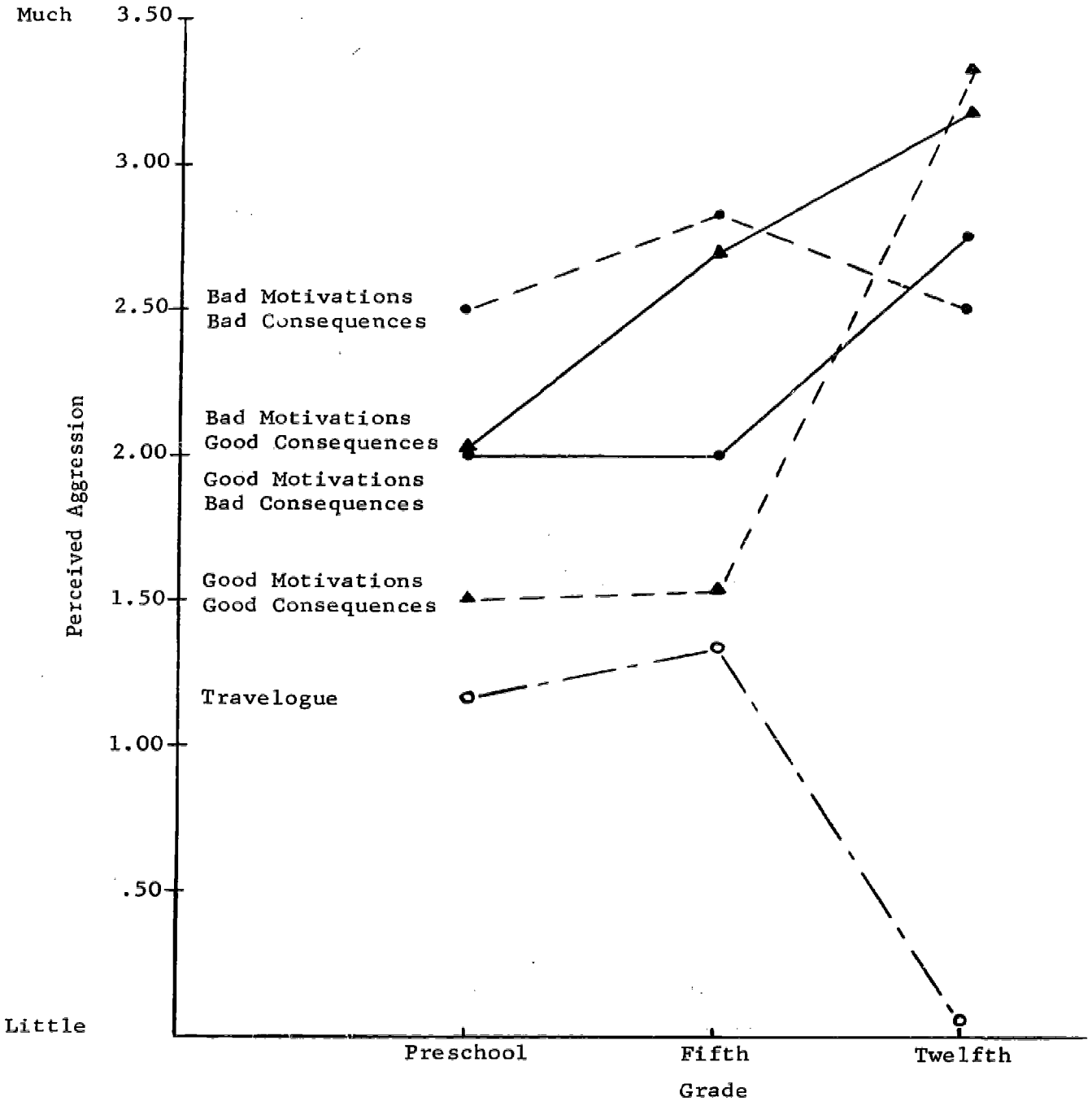
A similar analysis was carried out on Ss' perception of the amount of violence in each program. These data are presented graphically in Figure IV-3. The perceived aggression in the travelogue has been included for comparison and indicates that all Ss may have considered it less violent than the other four programs, although it is not until twelfth grade that there is a clear differentiation between ratings for violent and nonviolent programs. There are no obvious differences between the perceived violence ratings of the four violent programs. Analysis of variance with the preschool and fifth grade Ss for the four violent programs (grade by motivation by consequence) revealed no significant main or interaction terms whatsoever. One can probably conclude that the four violent programs do not differ in the perceived amount of aggression they contain and certainly do not differ in perceived aggression by virtue of the depicted motivations and consequences.

Insert Figure IV-3 about here

Response hierarchy scores were coded as before (see Section II) and analyses performed on the physical aggression scores. Most analyses employed a change score (physical aggression after viewing minus physical

Figure IV-3

Amount of Perceived Aggression By Depiction of Motivation and Consequences and Grade Level



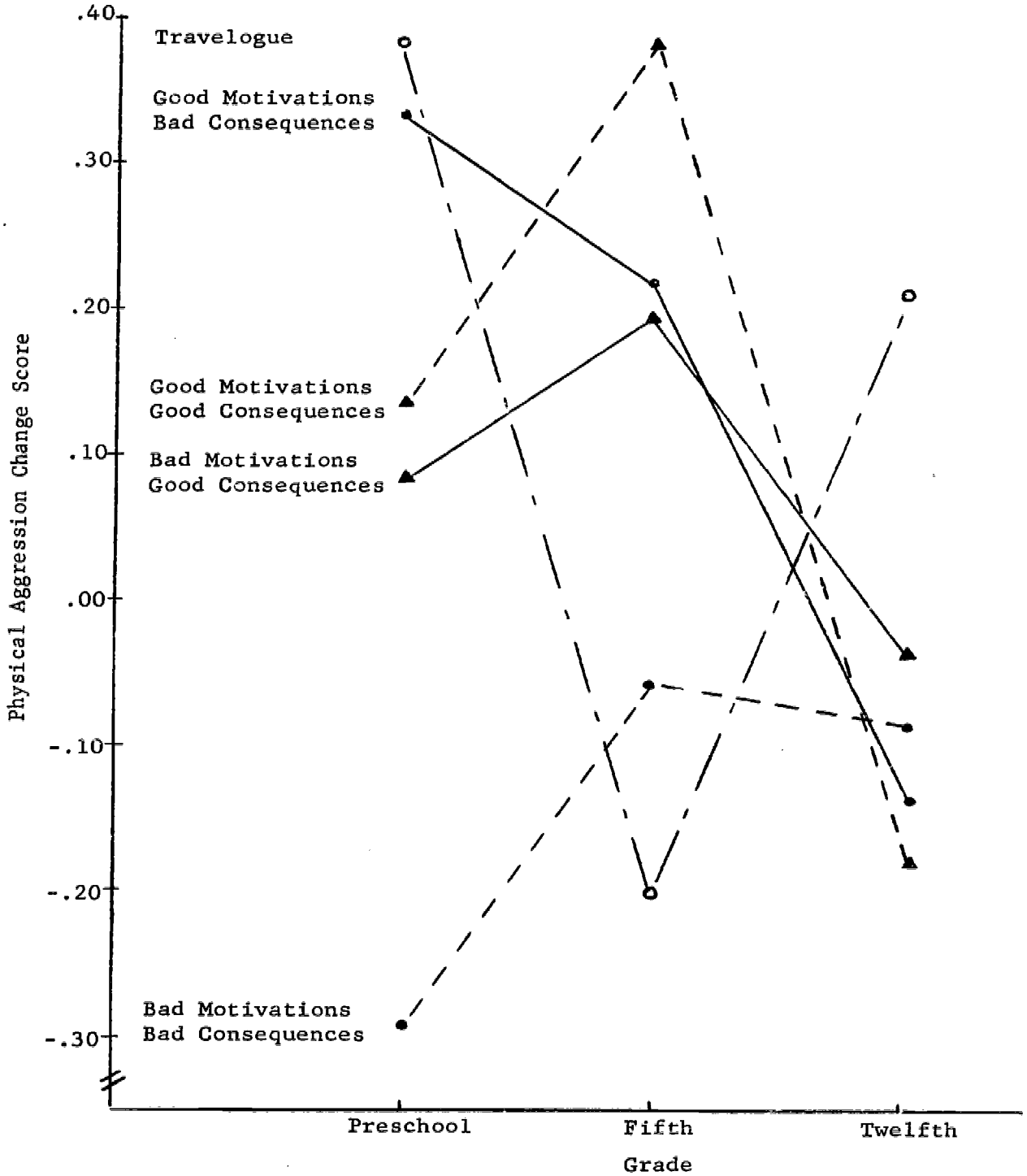
aggression at least two weeks prior to viewing). These data are presented graphically in Figure IV-4. A three-way ANOVA for the preschool and fifth grade Ss' scores revealed only one significant main effect and no significant interactions, providing support for hypothesis 1 and no support for hypotheses 2, 3, and 4. Those programs whose depicted motivations for aggression were bad produced a slight decrease in aggression from the before to the after test while those programs whose motivations were good produced a slight increase in aggressive responses ($F=4.10$; $df=1,49$; $p < .05$). Figure IV-4 suggests that this effect is due almost entirely to the program with bad motivations and bad consequences (Silent Force). However, t-tests between physical aggression change scores for this program and the next closest program (bad motivation and good consequences) did not approach significance ($t< 1$). Moreover, t-tests indicated that none of the change scores were significantly different from zero ($t < 1$).

Insert Figure IV -4 about here

Figure IV-4 includes the physical aggression change score for Ss who viewed the nonaggressive travelogue. The aggressiveness of these Ss relative to those who viewed the aggressive tapes varies with the age of the Ss. Although t-tests revealed no significant differences between the travelogue and any of the programs at any grade level generally for preschool Ss, exposure to the travelogue produced about as much change in aggressive choices as did three of the violent programs, for fifth graders it produced less change in aggressive choices than did three of the violent programs, and for twelfth graders it produced more change than any of the four violent programs.

Figure IV-4

Response Hierarchy Change Scores by Depiction of Motives and Consequences and By Grade Level



Regression analyses were also performed on the physical aggression change scores to test for the effects of (1) exposure to aggressive content per se and (2) individual differences in perceived aggression, motivation, and consequences. Independent variables were sex, grade, depicted aggression, depicted motivation for aggression, depicted consequences for aggression, perceived aggression, perceived motivation, and perceived consequences. Scores from all five programs were included in the analysis. There were no significant predictors nor a significant regression equation. There is a slight suggestion of the same effect for depicted motivation as previously found in the ANOVA. Because regression analyses may be performed with missing data, a second analysis that included twelfth grade Ss was run. Again there were no significant predictors and no significant regression equation.

Similar regression analyses were run using the physical aggression score immediately after television viewing as the dependent variable and including the physical aggression score obtained in the before test as an additional independent variable. In these analyses the aggressiveness of a child on the before test was a good predictor of his aggressiveness after television viewing ($F=61.27$; $df=1,79$; $p < .01$ for all three grades and $F=50.35$; $df=1,60$; $p < .01$ for preschool and fifth grade Ss only). Also boys were more aggressive than girls ($F=5.93$; $df=1,79$; $p < .05$ for all three grades and $F=2.97$; $df=1,60$; $p < .10$ for preschool and fifth grade Ss only). There was also the suggestion that children who were more aggressive on the after test perceived the depicted consequences of aggression to be worse than children who were less aggressive ($F=3.17$; $df=1,79$; $p < .10$ for all three grades and $F=3.68$; $df=1,60$; $p <.10$) for preschool and fifth grade Ss only.

These regression analyses suggest that there is no effect of exposure to aggressive and nonaggressive content that is consistent over age (the regression analyses performed here cannot reflect interactions such as suggested by Figure IV-4). They also provide no indication that an S's conception of the depicted aggression, motivations, or consequences is related to his subsequent aggressive behavior.

DISCUSSION

The results of this study provide only scant support for the hypothesis that the type of motivations and consequences associated with aggressive behavior will modify the effects of exposure to such aggressive behavior. The data suggest that aggression performed with good motivations may lead to greater subsequent aggression on the part of the viewer than aggression performed with bad motivations. There was no support for a similar effect of good and bad consequences for aggressive behaivor, nor was there any indication statistically of a differential effect of motivations, consequences, or aggression on children of widely different ages.

These results, however, must be viewed with caution. Graphically they suggest that exposure to aggressive content -- whatever the motivations and consequences associated with it -- may have different effects (when compared to exposure to nonaggressive content) on children between the ages of four and eighteen. Moreover, the type of motivations and consequences associated with aggressive content any influence the subsequent aggressive behavior of young children and not that of older children. Yet a comfortable acceptance or rejection of these statements must rest on data from many more children and other programs.

SECTION V

JUSTIFICATION FOR AGGRESSION AND SUBSEQUENT AGGRESSIVE RESPONSES ACROSS AGE

In conjunction with this research contract M. J. Nolan (1971) explored the relationship over age between portrayed justification for an aggressive display and the amount of subsequent aggression. Berkowitz and Rawlings, using college age males as Ss, have (1963) reported that aggression presented to adults as justified produced greater subsequent aggression than aggression presented as unjustified. Nolan sought to extend these findings to younger children. The theoretical and experimental rationale for the work has already been presented (Section I). The hypotheses were as follows:

1. Exposure to justified aggression will elicit more frequent selection of aggressive responses in anger-provoking situations than exposure to less-justified aggression.

2. Differences in the effects of exposure to justified and less-justified aggression will increase with age.

Method

The same stimulus used by Berkowitz and Rawlings, a 9 minute 25 second prize fight scene from the movie The Champion (1949), was selected for presentation. Their introductions, which manipulated justification for the portrayed aggression, were used with some alterations. Language was simplified enough to make the content understandable to the youngest subjects in this study. Additionally, some aspects of the justification were altered. Berkowitz' justification for the loser's severe beating rested heavily on sexual conquests of the girl friends,

fiancees, and wives of his male friends, relatives, and business associates. These exploits could only be alluded to with younger children, and hence also only alluded to with older children. It is doubtful, moreover, that younger children and/or girls would be much disturbed by the sexual athletics of a middle-aged boxer.

Thus in the aggression-justified condition in the present study, the loser was presented as a scheming manipulator who used friends and acquaintances to his own benefit. In the aggression-less-justified condition he was presented as an average fellow who only wanted to succeed as a boxer. The action in both conditions was identical -- Midge Kelly, played by Kirk Douglas, was defeated in a bloody boxing match.

In order to mediate the stimulus via television videotape recordings were made from the original film. A professional announcer recorded the two justification stories over the film sound track; this served as introduction to the action. This procedure differs from Berkowitz and Rawlings' procedure in which the stories were read to Ss before they began to view the film. For the fight itself, the original sound track was used.

Subjects

Ss were 51 fourth graders, 56 seventh graders, and 53 tenth graders, with about equal numbers of boys and girls at each grade. All attended parochial schools in nearby communities. Ss were assigned as an entire class to one of the two justification conditions. One male graduate student served as E throughout; however, a double-blind procedure was successfully maintained so that he remained unaware of condition assignments until the completion of the entire project.

Procedure

Ss were tested as a class during regular school hours. The situation was informal and, with one exception, outside of regular classrooms. Ss were told they would be participating in two separate studies -- one a study of attitudes of children of different ages toward types of television movies and the other a study of situation-specific behavior. E explained that attitude questionnaires were more effective if some time were allowed to elapse between seeing the movie and answering the questions about it. This time would be filled by the situation-specific behavior study.

With E out of the room Ss watched the tape with one of the two justifications for the beating. At the conclusion of the tape E returned and administered the response hierarchy, using slides to portray the response pairs. After this a questionnaire about the film was administered. It consisted of several filler items and three items designed to measure S's opinion about the character of the loser and whether he deserved to be beaten. Ss were then asked about the true nature of the experiment, which no one seemed to have divined. Finally, Ss were debriefed and all questions answered.

Results

Scores on the two questions asking for evaluation of the loser's character and the one question asking whether he deserved to lose were analyzed to test success of the justification manipulation. Mean scores on these questions, presented in Table V-1, indicate that Ss in all three grades understood the manipulation.

Insert Table V-1 about here

Scores on each question were submitted to a three factor ANOVA (grade by sex by justification condition) which revealed a highly significant effect for justification in each case (first character evaluation question: $F=66.09$; second character evaluation question: $F=52.39$; deserve to lose question: $F=19.59$; with $df=1,148$ and $p < .001$ for all three).[1] Ss in the aggression-justified group were more likely to evaluate the loser's character as bad and more likely to feel that he deserved his beating than were Ss in the aggression-less-justified group. On the second character evaluation question there was also a grade by justification condition interaction ($F=3.14$; $df=2,148$; $p < .05$) due to greater between condition differentiation among younger children.

In addition, boys were more likely than girls to evaluate the character of the loser favorably on both character evaluation questions ($F=7.27$ and $F=4.36$ with $df=1,148$ and $p < .01$ and $p < .05$ respectively); there was greater between condition differentiation among boys than girls on the first character evaluation question ($F=10.19$; $df=1,148$; $p < .01$); and there was a significant effect for grade on the second character evaluation question ($F=8.34$; $df=2,148$; $p < .01$), with positive evaluation inversely related to grade. Grade was also significant on the question asking whether the loser deserved his beating ($F=6.26$; $df=2,148$, $p < .01$) but the order from most to least deserved was seventh, fourth, and tenth grades.

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[1]For all analysis of variance tables reported in this section see Appendix A-V.

Table V-1

Mean Scores for Perceived Character of Victim and Justification for Loss By Justification Condition and Grade

Grade	Good Person Aggression: Justified	Good Person Aggression: Less Justified	Fair in Dealings Aggression: Justified	Fair in Dealings Aggression: Less Justified	Deserve to Lose Aggression: Justified	Deserve to Lose Aggression: Less Justified
4	11.88	16.85	11.25	16.85	18.13	15.19
7	12.04	15.34	10.74	15.17	19.63	16.72
10	10.42	16.03	10.21	12.41	16.67	14.66
	High score means more desirable character		High score means more desirable character		High score means more deserving of beating	

There was no effect for sex on the latter question. In summary, then, there was clear evidence that the justification manipulation was successful.

Response hierarchy scores were coded as in all previous work (see Section II). Scores were transformed to stabilize variance across cells (Y^1= arcsin $\sqrt{Y/18}$). All analyses were then performed on both raw and transformed scores. Since results were the same regardless of which scores were used, only transformed data will be presented. Scores for choice of verbal aggression were also analyzed, but since they were neither conceptually nor statistically independent of those for physical aggression (r= -.82 for both fourth and seventh grade and -.89 for tenth grade), they too will not be reported.

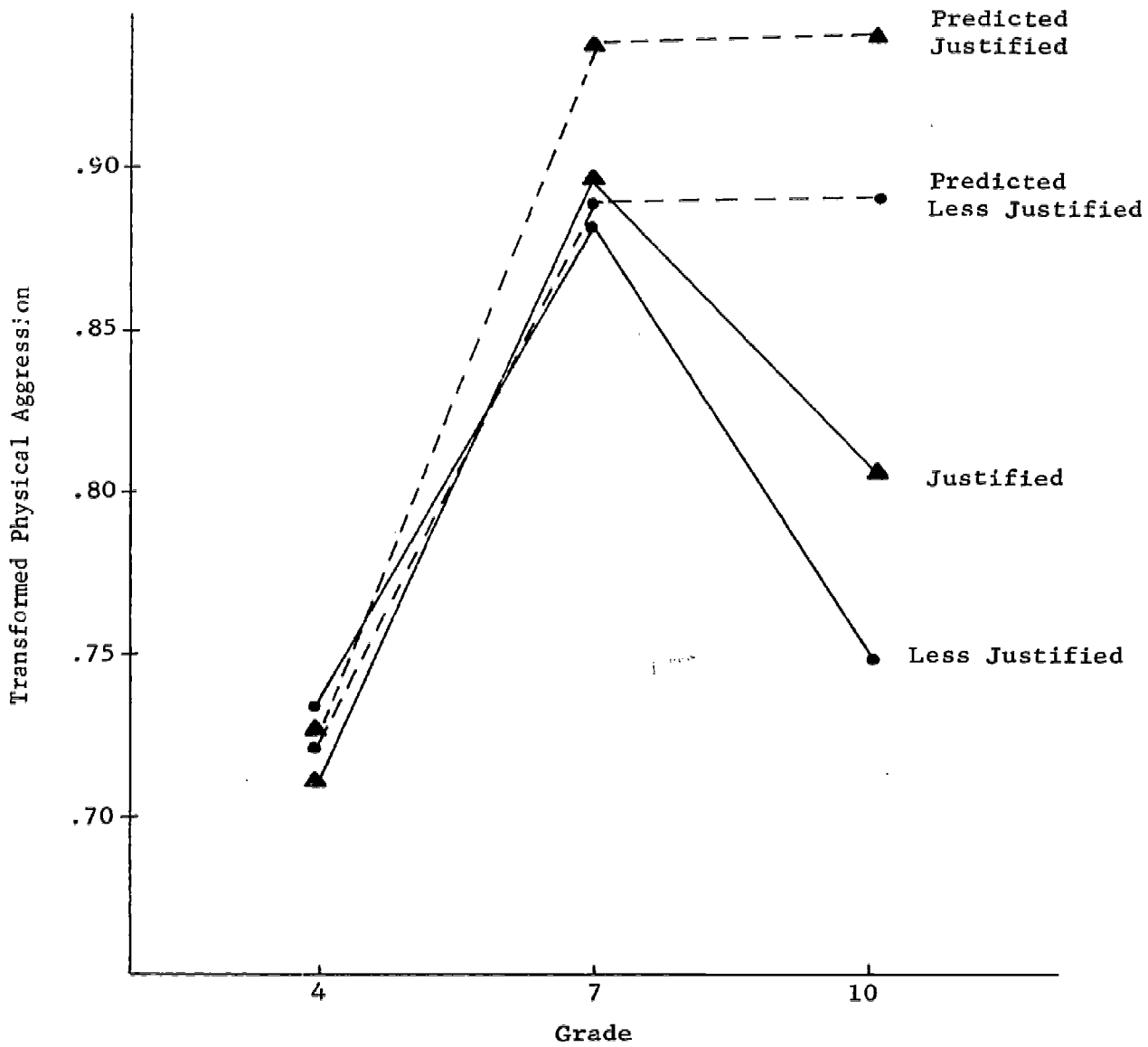
Figure V-1 presents mean physical aggression scores by justification, condition, and grade. These scores were submitted to a three way ANOVA (sex by grade by justification). There was a significant effect for grade ($F=4.56$; $df=2,148$; $p < .05$), where order of grade from least to most aggressive was fourth, tenth, seventh. There was also an effect for sex ($F=40.52$; $df=1,148$; $p < .001$), boys consistently responding more aggressively than girls. There was no effect for justification condition ($F< 1$), nor were there any significant interactions.

Insert Figure V-1 about here

These results failed to support either hypothesis 1, that viewing justified aggression would lead to more aggressive responses than would viewing less-justified aggression, or hypothesis 2, that the justification manipulation would be more effective with older children than with younger.

Figure V-1

Mean Transformed Physical Aggression Scores
and Predicted Physical Aggression Scores
By Justification Condition and Grade



However, as Figure V-1 illustrates, there was some indication of greater differentiation between conditions among the oldest Ss but not among the two younger groups. This differentiation was in the predicted direction.

In order to test for this effect, a planned comparison (Hays, 1963) embodying both hypotheses 1 and 2 was performed. The predicted results embodied by the planned comparison are superimposed upon the obtained results in Figure V-1. The sum of squares for the planned comparison belongs to the sum of squares for grade, condition, and grade by condition. The planned comparison accounted for a significant proportion of this variability ($F=6.55$; $df=1,148$; $p < .05$). The F ratio for the residual was not significant, indicating that the planned comparison accounted for the major portion of the variability and providing some tentative support for hypothesis 2.

Finally, regression analyses were performed to test the effects of individual differences in understanding the justification manipulation. Four analyses, one for all Ss combined and one for subjects within each grade level, were performed using choice of physical aggression as the dependent variable. For the combined analysis, independent variables were grade, sex, justification manipulation, Ss rating of whether the loser deserved his beating, and Ss evaluation of the loser's character (sum of two evaluation scores). With the exception of grade, the within grade analyses contained the same independent variables.

Table V-2 presents the results of all four regression analyses. Major emphasis should perhaps be put upon the ability of Ss' ratings of "deserved to lose" to predict subsequent aggression. Adult judges

agreed that this variable was most related to the concept of justified or unjustified aggression. The loser's character was considered less central to evaluating justification for aggression.

Insert Table V-2 about here

In all four analyses sex predicts choice of physical aggression, with boys more aggressive than girls at each grade. Justification manipulation never predicts choice of physical aggression. Ss perception of whether the loser deserved his beating predicts physical aggression for all grades combined, with Ss who see the aggression as more justified choosing more aggressive responses themselves. This effect is greatest at fourth grade and non-existent by tenth grade. The perceived character of the loser also predicts later choice of physical aggression, but surprisingly, those who rate the loser as a better person chose more physical aggression. As before, the effects of perception of character are strongest at fourth and seventh grades and not evident at tenth grade. In the overall analysis grade is not a significant predictor of choice of physical aggression.

Discussion

The results suggest that the justification manipulations were effectively transmitted to all Ss regardless of their age, but that these manipulations did not influence Ss' later level of aggression. However, Ss' own evaluations of the justification and the character of the loser did influence their subsequent aggression. Ss who felt the beating was deserved were more likely to choose aggression to resolve their own

Table V-2

Results of Regression Analyses
On Physical Aggression Response Hierarchy Scores
For Three Grades Separately and Combined

	All Grades			Fourth Grade			Seventh Grade			Tenth Grade		
	df	MS	F	df	MS	F	df	MS	F	df	MS	F
Regression	5	0.91	12.30**	4	0.40	4.17**	4	0.52	7.66**	4	0.26	4.72**
Grade	1	0.07	1.00	-	-	-	-	-	-	-	-	-
Sex	1	3.16	45.14**	1	0.94	9.40**	1	1.61	23.00**	1	1.00	20.00**
Condition	1	0.01	0.14	1	0.00	0.00	1	0.01	0.14	1	0.01	0.20
Deserves	1	0.77	11.00**	1	0.31	3.10[a]	1	0.17	2.43	1	0.02	0.40
Character	1	0.54	7.71**	1	0.36	3.60[a]	1	0.30	4.29*	1	0.00	0.00
Residual	154	0.07		46	0.10		51	0.07		48	0.05	

[a] $p < .10$

* $p < .05$

** $p < .01$

conflicts and Ss who evaluated the loser's character more favorably also chose more aggression. These results are stronger with younger Ss; there are no such effects with the oldest Ss.

The positive relationship between favorable evaluation of the loser's character and subsequent physical aggression is puzzling. The justification manipulation produced the expected character evaluations at all grades: a less favorable evaluation in the justified condition and a more favorable in the unjustified. Yet a more favorable evaluation predicted more choices of physical aggression. An explanation should be sought through further research.

In summary, it appears that what is understood about the justification for observed aggression may influence subsequent aggression. However, in this study this was only true for younger children, perhaps those who do not discount television programs as fantasy. Finally it should be noted that adult judgments about the justification that is being presented are not adequate for predicting the effect of the justification on children's subsequent aggression.

SECTION VI

TEMPORAL SEPARATION OF MOTIVATIONS AND CONSEQUENCES FOR VIOLENCE AND SUBSEQUENT AGGRESSIVE RESPONSES ACROSS AGE

In conjunction with this research project W. A. Collins investigated the effects over age of varying temporal separation between portrayals of aggression and the motivations for and consequences of it. In addition to measuring effects of varying temporal separation on understanding of motivations for and consequences of an aggressive sequence and on aggressive responses subsequent to viewing, he also attempted to correlate measures of understanding with measures of aggressive response. A detailed treatment of his research may be found in Collins (1971). The previous work that relates to Collins' experiment was presented in Section I. The hypotheses suggested by this work were as follows:

1. Understanding of the motivations for and consequences of aggressive behavior will be greater when these events are contiguous in time than when they are separated in time by intervening events.

2. Differences in the effects of temporal separation on understanding will decrease with increasing age.

3. Temporal separation between negative motivations and negative consequences and the aggressive acts to which they pertain will increase the likelihood of subsequent aggressive behavior.

4. Differences in the effects of temporal separation on aggressive behavior will decrease with increasing age.

5. The better negative motivations and consequences for modeled aggression are understood the less likely is subsequent aggressive behavior to occur.

METHOD

Stimuli

One program from the then new, but now defunct, television series "Silent Force" was selected. It was edited for two purposes: (1) to permit clear predictions about the behavioral effects of the aggressive content and (2) to provide two degrees of temporal separation (high and low) between motivations and aggression and between aggression and consequences. Adults viewed the program in its entirety and rated it as described earlier (see Section III). In addition, viewers listed the motivations for and consequences of each aggressive act. All acts judged aggressive by the raters, except one at the end of the program, were removed. The remaining aggressive scene met two criteria: (1) both motivations and consequences for the aggression were judged to be negative and (2) neither the motivations nor consequences were themselves aggressive. Thus all aggressive behavior in the program was negatively motivated and led to negative consequences, thereby avoiding some of the problems encountered in our validation study with four-year-olds (see Section II).

Temporal separation between motivations and aggression and between aggression and consequences was manipulated through placement of sequences of four, one-minute commercials. In the high separation condition one commercial sequence was placed between motivations and aggression and another commercial sequence between aggression and consequences. In the low separation condition both sequences were placed near the beginning of the program, prior to portrayal of motivations, aggressive act, and consequences. The commercials were neither violent nor highly active, but their settings were similar to those in the program.

Final versions of the edited program were on black and white videotape and lasted approximately 20 minutes. A black and white, 8 mm. sound documentary film on California, also 20 minutes in duration, served as the stimulus for the control group.

Subjects

Ss were 99 third graders, 138 sixth graders, and 112 tenth graders, with about equal numbers of boys and girls at each grade. All attended parochial schools in nearby communities.

Procedure

Ss were tested twice, approximately eighteen days apart. At the first session the response hierarchy was administered via slides, by one female E to an entire class in its own classroom.

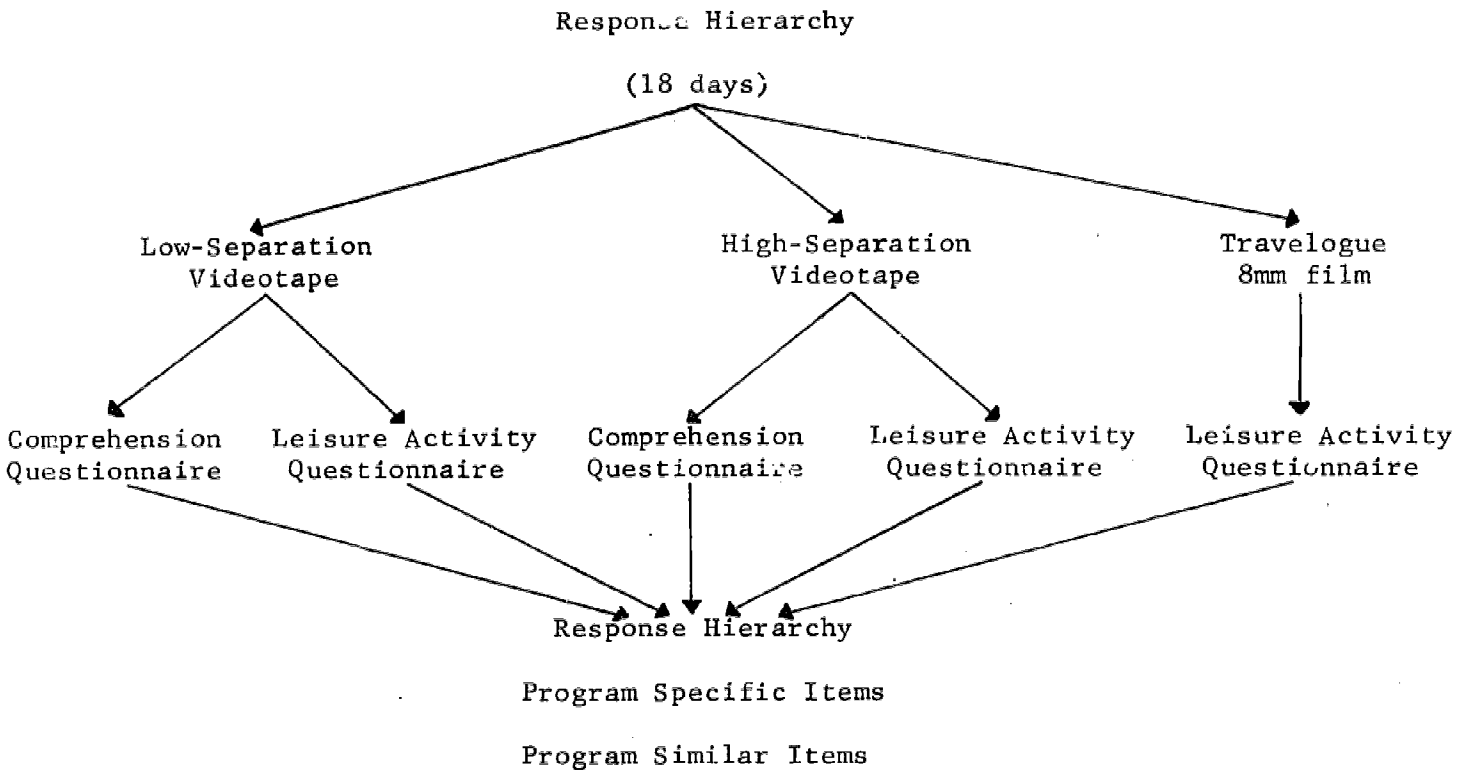
The second session occurred during regular school hours for third and sixth graders and right after school for tenth graders. Ss within each classroom were randomly assigned to one of five treatment groups with boys and girls as equally distributed as possible. These groups are presented in Figure VI-1 along with a diagram of the entire procedure. Three male and four female Es were used. Es for the two groups who answered the comprehension questionnaire were blind to the program viewed and the hypotheses of the study. The E who administered the response hierarchy and items associated with it did not know which group any S was in.

Insert Figure VI-1 about here

Ss in the four television groups were told that a coming development in home entertainment, the videotape recorder, was going to

Figure VI-1

Five Treatment Groups with Composition of Subject Groups
At Each Point in the Procedure



be demonstrated and that their opinions were desired. They were asked to relax and enjoy the program as they would at home. The appropriate tape of "Silent Force" was then shown. Ss in the control group were asked to look at the film on California in order to evaluate the film techniques used in it.

At the conclusion of the videotape half the Ss in each separation condition completed the comprehension questionnaire and half completed a questionnaire about leisure time activities. The latter questionnaire served as a control for the possible effects of the comprehension questionnaire on the response hierarchy and related items. All Ss in the control condition responded to the leisure time questionnaire. The comprehension questionnaire was similar to that previously employed (see Section III), although evaluations of motivation, consequences, and character were omitted. There were five questions about motivation, four about consequences, and one about the aggressive sequence in the final questionnaire. All items in both questionnaires were read to third graders; sixth and tenth graders worked on their own.

When the questionnaires were complete, all Ss returned to their classrooms, where they were administered the response hierarchy and six additional items. These additional items were in the same format as the response hierarchy items with responses also presented in pairs on slides. Three situations presented conditions in which violence had occurred in the program (program specific items). They were meant to test the likelihood that a child would advocate aggressive behavior under the conditions in which he had just seen it performed. The remaining three situations paralleled incidents which had contained aggression in the

unedited program (program similar items). The aggression had been edited out of the tapes the children had seen. These items were meant to test the likelihood that the depicted negative motivations and consequences would modify the advocacy of aggression in situations similar to the depicted ones and involving the same aggressor.

RESULTS

Comprehension

143 Ss viewed the high and low separation videotapes and also answered the comprehension questionnaire. The results over age are presented in Figure VI-2. The scores were subjected to a three factor ANOVA (grade by sex by separation).[1] There was a significant main effect for grade ($F=27.02$; $df=2,131$; $p < .01$) with scores increasing with grade. There was no effect of sex ($F=1.20$).

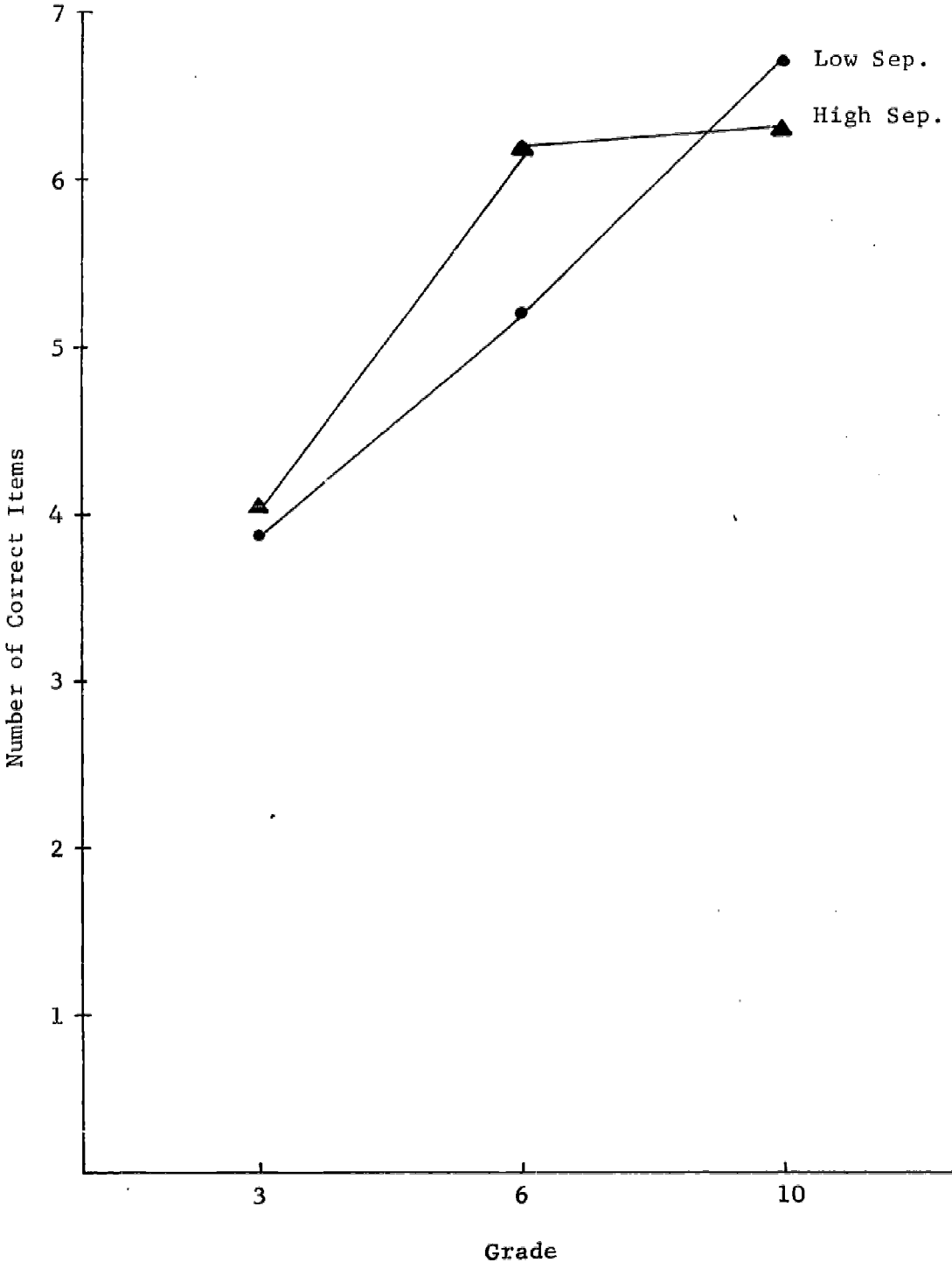
Insert Figure VI-2 about here

Contrary to hypothesis 1, there was no significant main effect of separation ($F=1.27$; $df=1,131$), understanding of motivations and consequences was no greater when these events were contiguous in time than when they were separated in time. Indeed, the results are in the opposite direction for the third and sixth graders. There were no significant interaction terms in the analysis of variance.

[1]For all analysis of variance tables in this section see Appendix A-VI.

Figure VI-2

Mean Comprehension Scores
By Temporal Separation and Grade



Hypothesis 2, that the differences between the two conditions would decrease over grade, could not be tested in the standard analysis of variance because the predicted patterns of means would simultaneously reflect effects accounted for by separate terms in a three-way analysis of variance. These terms are the main effects of grade and of separation, and the interaction of grade and separation. The appropriate test for such a hypothesized pattern of means is a planned comparison (Hays, 1963). According to this procedure, a sum of squares with df=1 is computed by associating observed cell means with coefficients which reflect the predicted pattern. These coefficients were -1, 2, 5 for third, sixth, and tenth graders in the low separation condition and -7, -2, 3 for the three grades in the high separation condition. The comparison accounted for a significant proportion of the between-groups variance ($F=29.87$; $df=1,131$; $p < .001$), supporting hypothesis 2. However, the residual variance, that not accounted for by the predicted pattern, was also significant ($F=4.05$; $df=10,131$; $p < .001$).

Similar analyses were carried out separately for the five motivations and the four consequence questions. Results were quite similar to those just reported for the full score and will not be detailed here.

The results just reported were contrary to both prediction and pretest data. It was felt that differential attention to the two separation condition videotapes might provide an explanation. Es reported that third and sixth graders in the low separation condition lost interest when confronted with eight minutes of commercials (two sets of four minutes each) near the beginning of the program, and that

their attention returned only when the aggressive sequence began. Such lack of attention during the early part of the program would mediate against both learning of characters' names, which was necessary to correctly respond to the questionnaire, and against learning much about motivations, which occurred prior to the aggressive sequence. Pretest Ss attended a different school and were attentive throughout both versions of the program.

In order to test this attention hypothesis, an additional group at each grade level viewed the videotape minus all commercials and responded to the comprehension questionnaire (response hierarchy measures were not administered). In all three grades, the no-commercial group scored higher on the comprehension test than did either of the two separation groups. However, t-tests between the no-commercial group and the higher of the two separation groups at each grade were never significant.

Response Hierarchy and Associated Items.

Figure VI-3 presents the before and after scores for the response hierarchy and the after scores for the program specific and program similar items. For the before scores all Ss are combined at each grade, since there were no differences between any of the groups. The increasing aggressiveness with age on the before score corresponds to data reported elsewhere for the response hierarchy administered without exposure to aggressive stimuli (See Section II). The curvilinear pattern for the after scores over age also corresponds to that reported elsewhere after exposure to aggressive stimuli (see Sections III and V).

Insert Figure VI-3 about here

Three physical aggression change scores were computed for each S by subtracting his pre-exposure response hierarchy mean from his post exposure mean for physical aggression, the response hierarchy items, the program specific items, and the program similar items. Change scores for verbal aggression were also computed, but since the stimulus aggression was primarily physical and since the physical and verbal scores are not independent, they will not be reported here. Results obtained in analyses of the verbal aggression scores were, however, similar to those reported here for physical aggression. Table VI-1 presents mean physical aggression change scores for each of the three measures.

Insert Table VI-1 about here

The change scores were subjected to a four-factor ANOVA (grade by sex by separation condition by questionnaire type) in order to determine whether responding to the comprehension questionnaire influenced subsequent choices on the response hierarchy and related items. Control group Ss, who responded only to the leisure time questionnaire, were excluded from this analysis.

While there was no significant effect for questionnaire in the response hierarchy change scores ($F < 1$), there was an effect in both program specific items ($F=13.62$; $df=1,249$; $p < .001$) and program similar items ($F=4.61$; $df=1,249$; $p < .05$). Ss who completed the comprehension questionnaire responded more aggressively on program-related items than did Ss who completed the questionnaire unrelated to program content. While there was little indication of this effect on response hierarchy scores, the comprehension measure clearly sensitized Ss to program-related items.

Figure VI-3

Choice of Physical Aggression
Before and After Treatment
By Item Type and Grade

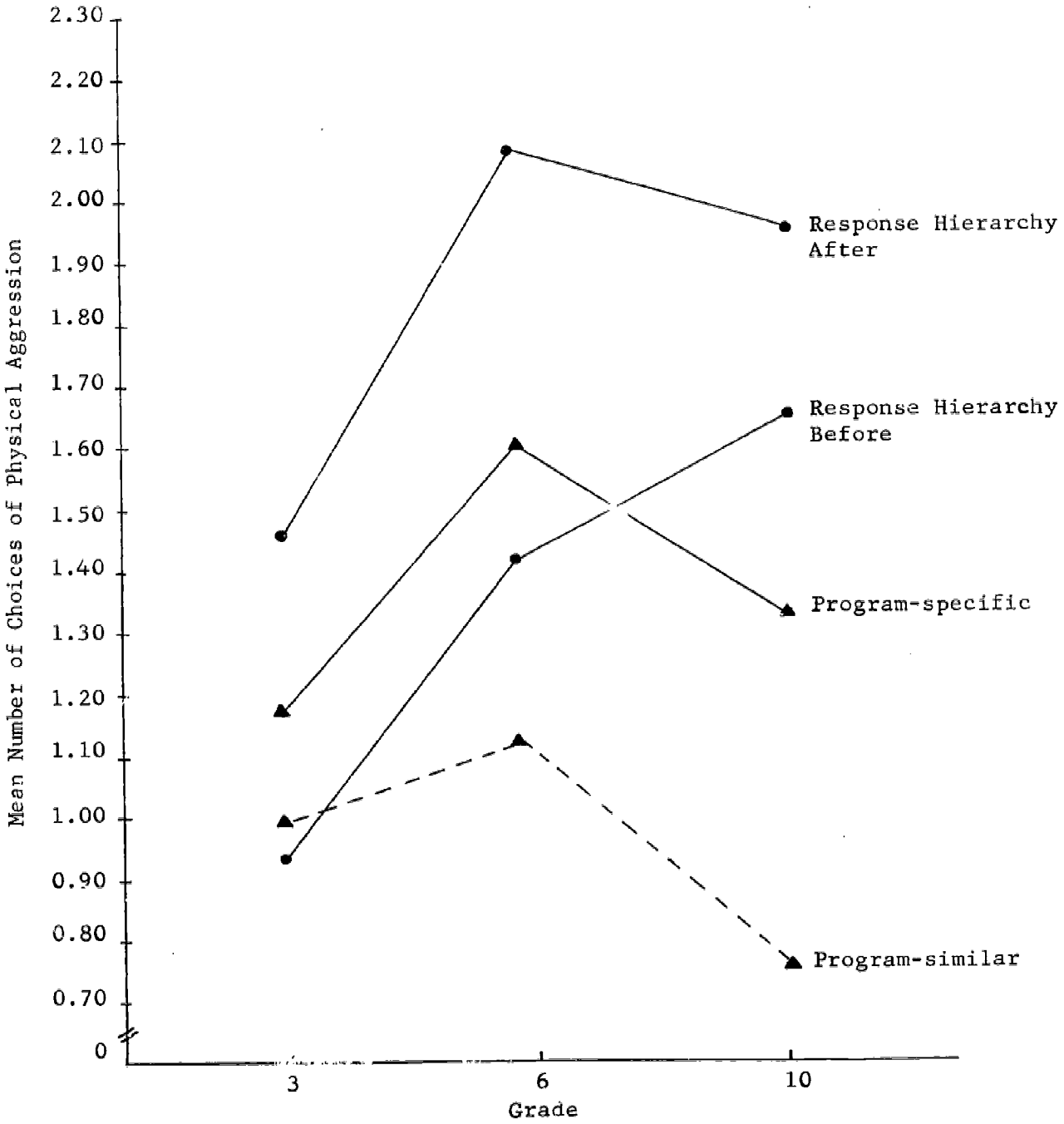


Table VI-1

A. Mean Physical Aggression Response Hierarchy Change Scores by Sex, Grade, Separation Condition and Questionnaire Type

Separation Condition	Sex	Comprenension Questionnaire Grade 3rd	6th	10th	Unrelated Questionnaire Grade 3rd	6th	10th
Low	Boys	.92	.63	.48	.38	.78	.07
	Girls	.11	.90	.40	.12	.77	.52
High	Boys	.50	.80	.21	1.10	.51	.09
	Girls	.13	.67	.07	.56	.83	.10

B. Mean Physical Aggression Program Specific Change Scores by Sex, Grade, Separation Condition and Questionnaire Type

Separation Condition	Sex	Comprehension Questionnaire Grade 3rd	6th	10th	Unrelated Questionnaire Grade 3rd	6th	10th
Low	Boys	.58	.48	.01	-.10	.18	-.23
	Girls	.11	.53	.54	-.10	.28	-.41
High	Boys	.65	.65	.11	.62	-.06	-.56
	Girls	.44	.27	.22	.02	.31	.00

C. Mean Physical Aggression Program Similar Change Scores by Sex, Grade, Separation Condition and Questionnaire Type

Separation Condition	Sex	Comprehension Questionnaire Grade 3rd	6th	10th	Unrelated Questionnaire Grade 3rd	6th	10th
Low	Boys	.50	-.21	-.68	-.07	.41	-1.10
	Girls	-.05	-.35	-.46	-.36	-.10	-.78
High	Boys	.48	.11	-.80	.05	-.32	-1.07
	Girls	.02	-.12	-.54	.06	-.22	-.54

The analyses also showed significant separation by questionnaire interactions for the program-related measures ($F=27.41$ for program specific and $F=9.24$ for program similar, with $df=1,249$, $p < .001$ for both). Condition means for two measures showed that Ss who did not take the comprehension test changed markedly less in the low separation condition than in the high separation condition, while Ss who completed the comprehension test had change scores that were about the same in the two conditions. That is, taking the comprehension test appeared to wash out the effects of temporal separation. Although this interaction was not significant for the response hierarchy change scores, the means revealed a similar pattern in the low separation condition.

There were significant grade by questionnaire interactions for all three measures, ($F=26.16$ for response hierarchy, $F=14.60$ for program specific and $F=10.31$ for program similar; with $df=2,249$ and $p < .01$ for all three), with the scores of third and tenth graders more affected by completing the comprehension questionnaire than the scores of sixth graders. There were also significant sex by questionnaire interactions for the two program-related measures ($F=27.45$ for program specific and $F=11.21$ for program similar; with $df=1,249$ and $p < .01$ for both), with girls' change scores more affected by the comprehension test than boys' scores. There were no other significant interaction effects involving the questionnaires.

In summary, then, administration of the comprehension measure appeared to increase the likelihood of physically aggressive responses on the two program related measures. This effect was more noticeable for Ss in the low separation condition than for Ss in the high separation

condition. It also differed according to the age and sex of the S. Because of the contamination in change scores of Ss who had taken the comprehension questionnaire subsequent analyses on response hierarchy and related scores were performed only with Ss who completed the leisure time questionnaire.

Mean change scores for the high and low separation and non-aggressive control conditions are presented in Figure VI-4 for all three grades and all three measures. The results for the response hierarchy will be presented in some detail here, then the results for the program specific and program similar items will be presented briefly.

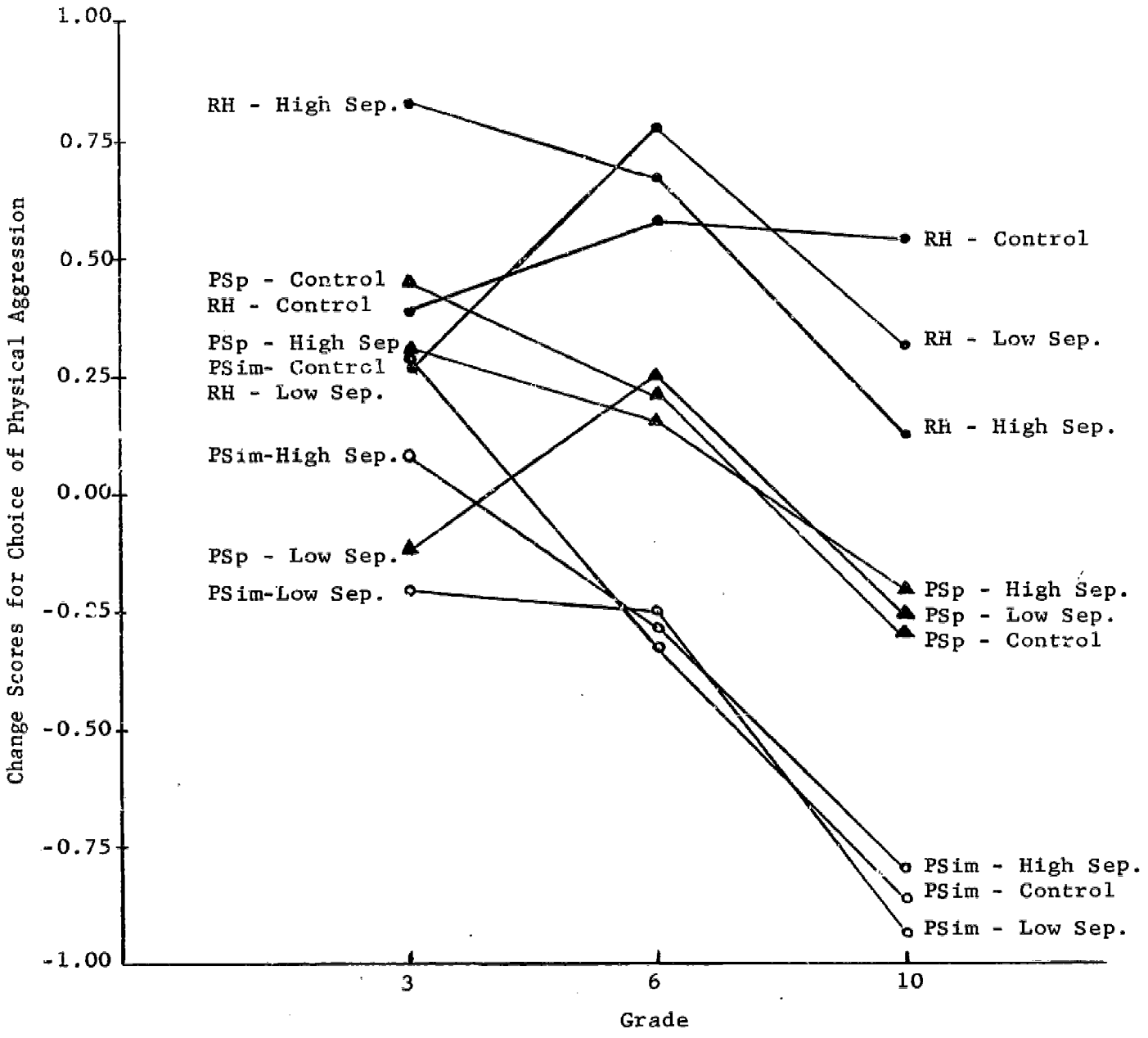
Insert Figure VI-4 about here

Response hierarchy change scores were submitted to a three-way ANOVA (grade by sex by condition). There was a significant effect for grade ($F=5.73$; $df=2,188$; $p < .01$), with the order from most to least change being sixth, third, and tenth. There was no significant effect of sex ($f < 1$). Girls and boys changed about the same amount, although boys chose more aggressive responses than did girls at each grade. There was a significant sex by grade interaction ($F=3.72$; $df=2,188$; $p < .05$) with third grade girls showing less change than third grade boys while girls in the other two grades changed more than the boys. There were no other significant interactions.

Contrary to hypothesis 3, that temporal separation between negative motivation and consequences and aggression will increase subsequent aggression there was no significant main effect for separation condition nor was there a significant grade by condition interaction.

Figure VI-4

Mean Change Scores for Physical Aggression
By Viewing Condition, Item Type, and Grade



RH = Response Hierarchy
PSp = Program Specific
PSim = Program Similar

However, t-tests between overall condition means showed that third graders' mean change score in the high separation condition was significantly higher than the mean in the low separation condition ($t=2.80$; $df=188$; $p < .01$). T-tests for differences between the film control group and either of the two separation groups did not reach significance at any of the three grade levels. These t-test results provide tentative support for hypothesis 4, that the effects of temporal separation on subsequent aggression will decrease with age.

Further support for this hypothesis comes from a planned comparison similar in conception to the one reported for comprehension scores. The coefficients for each grade in each condition were constructed to represent three aspects of the predicted pattern: (1) change scores would generally decrease over grade levels, (2) change scores would be greater in the high separation condition than in the low separation condition and (3) the difference between the change scores in the two separation conditions would decrease over grades. The coefficients were 7, 2, -3 for grades 3, 6 and 10 in the high separation condition and 1, -2, -5 for Ss in the low separation condition. A significant proportion of the between-groups variance was accounted for by this planned comparison ($F=9.76$; $df=1, 188$; $p < .01$). The residual sum of squares was not significant ($F=1.68$; $df=16, 188$). Thus the pattern of means representing hypothesis 4 accounted for most of the variability between the observed means in the experimental and control conditions at each age.

Results for the program specific and program similar items are presented in Figure VI-4. It is apparent that exposure to the videotaped programs did not influence the sixth and tenth graders' aggressive choices on the two sets of program-related items; the scores of the Ss

in the high and low separation conditions are quite similar to the scores for Ss who had not even seen the program! However, among third graders, exposure to the videotaped program and temporal separation between motivation, aggression, and consequences do seem to matter. For program specific items, third graders in the low separation condition change significantly less than third graders who saw the non-aggressive film ($t=2.33$; $df=188$; $p < .02$). As would be predicted, third graders in the high separation condition responded more aggressively than those in the low separation condition and less aggressively than those in the control condition, although neither difference was significant by t-test. For program similar items and third grade Ss, the order of the three groups from most to least change, is again control, high separation, low separation. None of the pairs of differences is significant.

Analysis of variance results for program specific items showed that change scores decrease significantly with grade ($F=10.13$; $df=2,188$; $p < .001$). Third grade girls change less than third grade boys while girls in the other two grades change more than the boys ($F=3.87$; $df=2,188$; $p < .05$). There were no other significant main or interaction effects.

Analysis of variance results for the program similar items were identical to those for the program specific items. There was a significant decrease in change scores with grade ($F=19.84$; $df=2,188$; $p < .001$), and girls changed less than boys in third grade and more in sixth and tenth grades ($F=5.10$; $df=2,188$; $p < .001$). There was no significant effect for sex and no other significant interaction.

Because of the previously reported evidence that completion of the comprehension test contaminated responses to program-related

items, and some suggestion that response hierarchy scores might be similarly influenced, hypothesis 5 -- that as understanding of negative motivation and consequences for depicted aggression increased subsequent aggression would decrease -- was not tested.

One further, unplanned analysis was performed. This consisted of an examination of the effects of initial level of aggression on aggression after exposure to one of the three conditions. On the basis of response hierarchy before scores, Ss within each grade were divided at the median to form high and low initial aggression groups. Mean physical aggression change scores for Ss who were initially either high or low are presented in Figure VI-5 for all three grades and all three conditions.

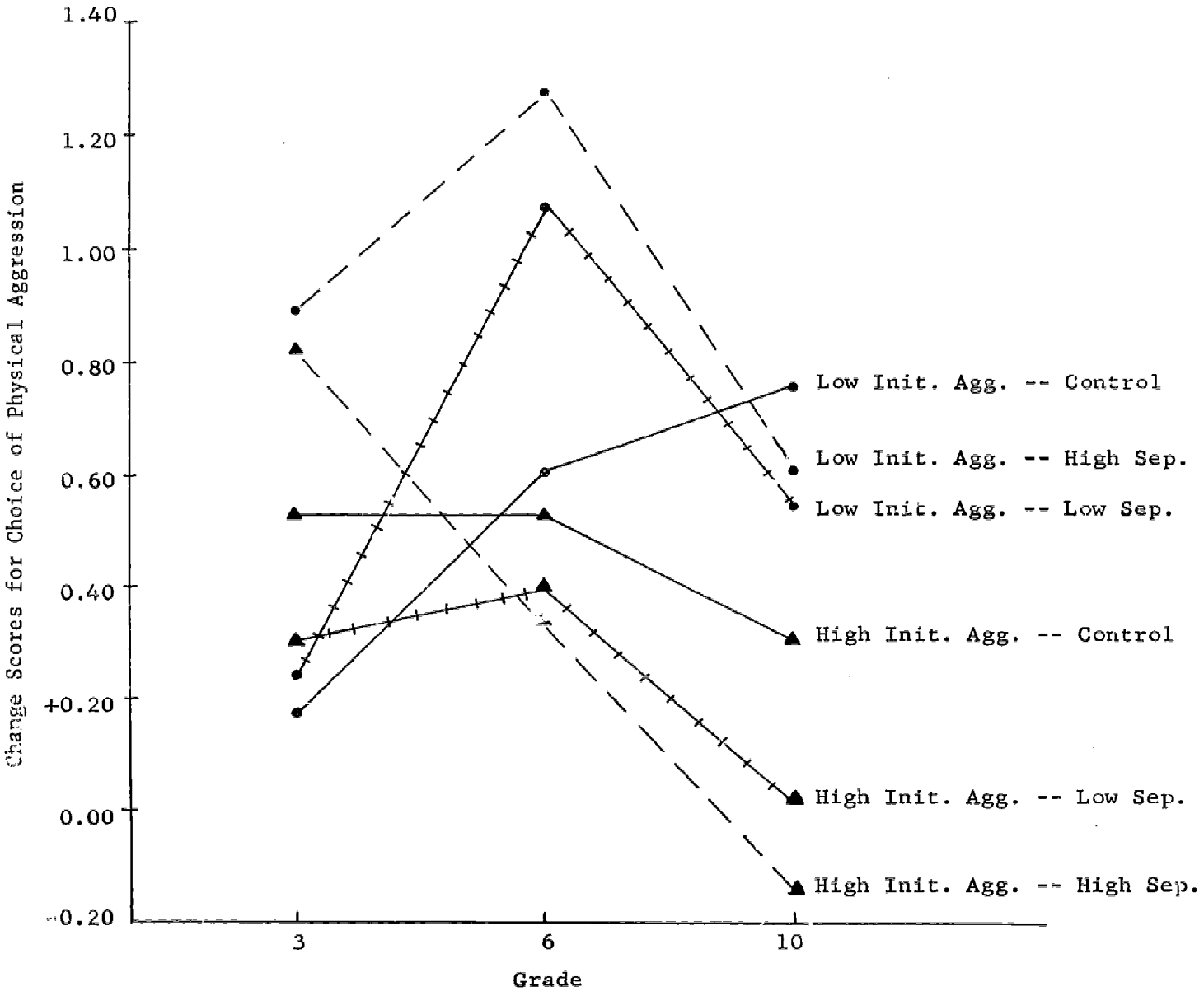
Insert Figure VI-5 about here

A four way ANOVA (grade by sex by separation condition by aggression level) revealed a significant main effect for initial aggression ($F=14.12$; $df=1,170$; $p < .01$) with Ss who were initially low changing more than Ss who were initially high. A large part of this difference, however, is probably due to regression to the mean. There was also a grade by initial aggression level interaction ($F=35.77$; $df=3,170$; $p < .01$) with regression to the mean occurring in sixth and tenth grades but not in the third grade.

There was a significant condition by initial aggression level interaction ($F=37.70$; $df=2,170$; $p < .01$), which is presented graphically in Figure VI-6. High and low initial aggression Ss in the control group changed about the same amount while low aggression Ss in the low separation group changed somewhat more and low aggression Ss in the high separation

Figure VI-5

Mean Change Scores for Physical Aggression
On the Response Hierarchy
By Viewing Condition, Initial Aggression Level, and Grade



group changed much more. High initial aggression Ss in both separation groups changed about the same amount and less than the control group Ss. Thus viewing an aggressive program with negative motivations and consequences inhibited the aggressive responses of Ss who were initially high in aggression relative to high-aggressive Ss who watched neutral fare; however, exposure to such aggressive fare increased the aggressive behavior of Ss who were initially low in aggression relative to low aggressive Ss who watched neutral fare.

Insert Figure VI-6 about here

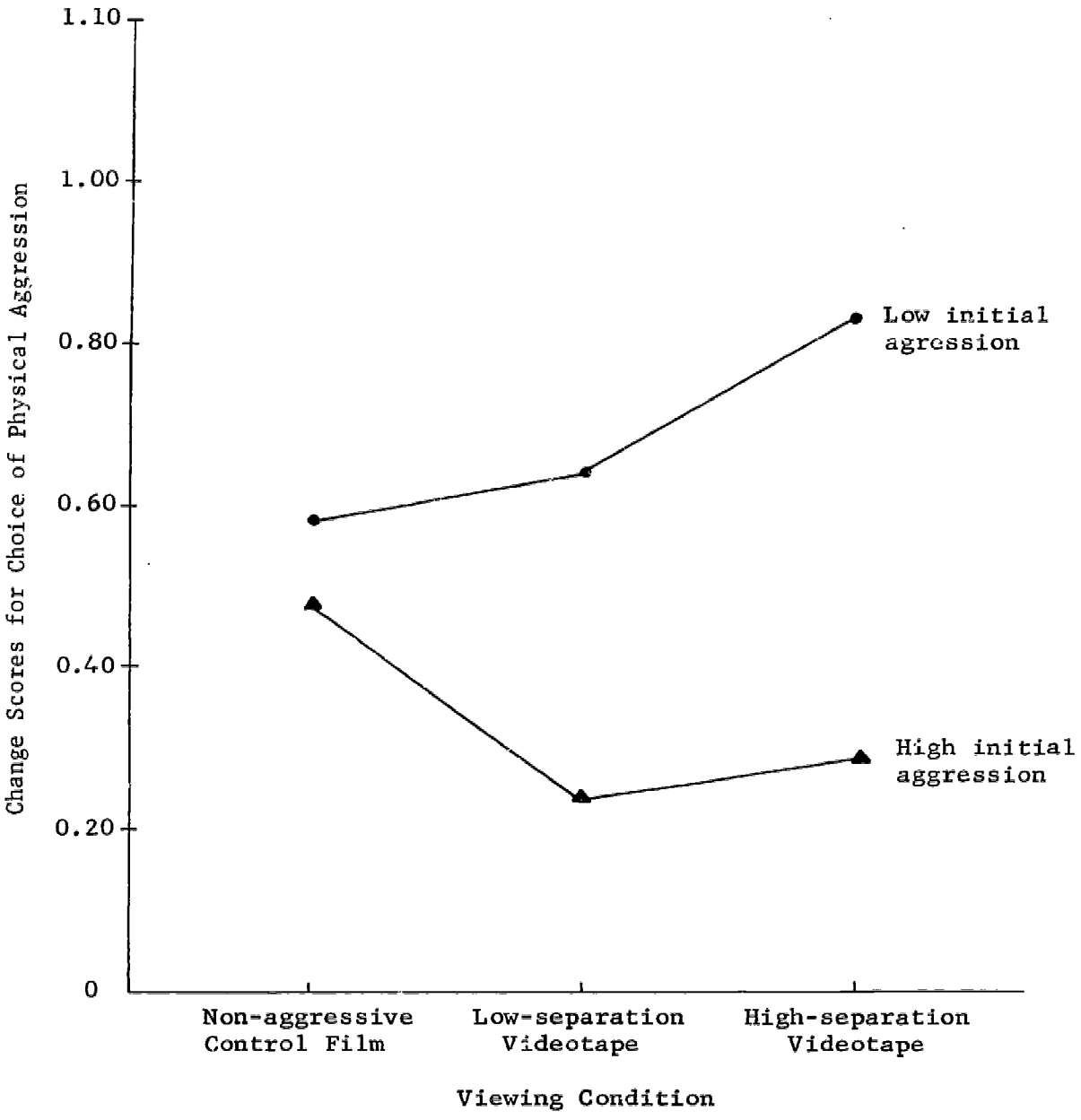
The only other significant term was the interaction between sex and initial aggression level ($F=29.97$; $df=1,170$; $p < .01$). Girls and boys who were initially high in aggression showed about the same amount of post-exposure change in aggression, while boys who were initially low in aggression changed more than did girls who were initially low.

Discussion

Collins' work indicates that temporal separation between events adults perceive to be related to depicted aggressive behavior may make it difficult for young children to understand these relationships. Moreover, such temporal separation, and the presumed consequent lack of understanding, may result in increased aggressiveness even if the intended message was that aggression does not pay and is not admired. For young children these effects may operate similarly for children both high and low in aggressive tendency. Such effects are considerably less pronounced or altogether absent among older children and adolescents.

Figure VI-6

Mean Change Scores for Physical Aggression
on the Response Hierarchy
By Viewing Condition and Initial Aggression Level



SECTION VII

DISCUSSION

The studies reported here were intended to explore the role of motivation for and consequences of aggressive acts in modifying the effects of exposure to such acts. The orientation has been developmental with a continuous search for those variables that operate similarly regardless of age and those variables that operate differently upon children of different ages.

Throughout our work there has been only minimal evidence that motivations and consequences, as they are commonly depicted in television programs, modify the effects of exposure to the aggressive content of these programs. On the one hand, the validation experiment with four-year-olds (Section II) demonstrated that depiction of highly salient, repeated consequences for aggressive behavior will influence both play behavior and verbal reports of behavioral solutions to fairly common situations involving interpersonal conflict. On the other hand, four studies which involved motivations and/or consequences for aggression, but in which the portrayal was considerably less blatant than that for the four-year-old validation and considerably closer to that of contemporary television, manifested little evidence that the observed motivations for or consequences of aggression modified subsequent aggression by the viewer.

Nolan (Section V) presented children with a short aggressive sequence and verbal information that made the beating of one of the aggressors either more or less justified. He found no evidence that the justification had much impact upon subsequent aggression by viewers,

although there was some indication that the viewer's own interpretation of the justification influenced his subsequent aggression. Collins (Section VI) edited a tape of a current television program such that the motivations and consequences for all aggressive acts were bad. He found little support for the proposition that viewers of such a tape would be less aggressive than viewers of a nonaggressive tape (nor were they more aggressive). In our own study with tapes of current programs edited to vary the desirability of the motivations for and consequences of aggression, there was some evidence that the motivations for observed aggression influenced subsequent aggression (Section IV). This study suggested that children who viewed violence performed for socially acceptable reasons were subsequently more aggressive than were children who viewed violence performed for socially unacceptable reasons.

However, even this one effect of motivation for aggression vanished when children watched full, half-hour television programs (Section III). These programs presented violent actions performed for both good and bad reasons and with good and bad consequences. Even though adults categorized the programs as generally portraying violence as rewarded, punished, well-motivated or poorly motivated, such categorizations were not reflected in the subsequent aggression of viewers.

Although we found minimal evidence that the depicted motivations or consequences for violence influenced subsequent aggression by viewers of many ages, one might still expect such an influence at one or two ages. The work we have reported included children between the ages of three and eighteen, yet we did not find a clear developmental trend in the effects of exposure to aggression with different motivations and consequences.

There is evidence that such an effect can be found with specially constructed videotape sequences shown to four-year-olds (Section II) and that the effect may remain for children of this age when the sequences are longer, edited versions of contemporary television programs (Section IV), but the effect disappears when the tapes are unedited, half-hour programs (Section III). Combining the three studies that employed specially constructed or edited videotapes (Sections IV, V, and VI) one finds a slight effect for motivations and consequences at third grade, no effect for justification at fourth grade, a slight effect for motivations and consequences at fifth grade, no effect for motivations and consequences at sixth grade, no effect for justification at seventh grade, some effect for justification and for motivations and consequences at tenth grade and no effect for motivations and consequences at twelfth grade. There was only one program, however, that produced very clear results, and that is the one with both negative motivations and consequences (reported in Sections IV and VI). The one study that employed unedited tapes of current programs (Section III) found no indication of an influence of motivations and/or consequences at kindergarten, third, sixth, ninth, and twelfth grades. Thus, there is little evidence for any developmental trend in the effects of motivations for and consequences of aggression on subsequent aggression.

The two most reasonable explanations for the general lack of effect for motivations and consequences are that children do not understand the motivations and/or consequences as they are presented and/or that they do not apply what they have seen isomorphically to their own behavior. We have not gathered direct evidence to support or refute the latter explanation, but we do have available evidence on the first

explanation (Section III). Children as young as five apparently do not understand motivations and consequences as they are presented in current television programs. By about the third grade, they understand about half of the material they are tested on. From this age on there is steady improvement in understanding such that twelfth graders understand almost all content they are tested upon. Understanding did depend somewhat upon the specific program viewed, but it did not depend upon the type of program viewed (i.e., children's program, western, or adult crime program).

Collins (Section VI) has provided evidence that at least some of the lack of understanding of the motivations and consequences in contemporary television programs may be due to the mass of information presented and the separation, both by time and additional, irrelevant content, of the primary content of motivation, action, and consequence. Our hypothesis that younger children would understand less about motivations than consequences because they were not oriented toward evaluating actions on the basis of motivation received no support whatsoever.

Children from kindergarten onward apparently do understand the evaluative content of a program when they understand the behavioral content. That is, even kindergarteners who understood why an aggressive act was performed or what the consequences of the act were understood whether that motivation or consequence was good or bad. Moreover, all children understand whether a character is intended to be a "good guy" or a "bad guy." For the edited programs preschoolers understood whether the portrayed motivations for aggression were good or bad, although they did not understand the consequences. It should be noted here that evaluation data for all children at each age have not been examined for the study of

unedited programs and that no measure of understanding the exact motivations or consequences was obtained in the study of edited programs. Thus, all the available data for estimating children's understanding of the evaluative aspects of a program have not been analyzed. However, there is sufficient data to suggest that preschool and kindergarten children understand only some of the evaluative content of a program, that by the age of eight children understand much of the evaluative message of a program, and that this understanding increases with age.

If children are only minimally affected by the motivations and consequences associated with current television portrayals of violence, even though by the age of eight they understand at least half of what is presented, are they any more affected by the portrayed violence itself? Within the body of work reported here there are seven instances in which such a question might be answered by comparing aggressive behavior after exposure to aggressive content with aggressive behavior after exposure to nonaggressive content. In three of these there is no apparent effect of exposure to violence, in two there is a slight increase in aggressiveness after exposure to aggression, in two there is a notable increase in aggressiveness after exposure to aggression, and in none is there either a slight or notable decrease in aggressiveness after exposure to aggression.

There was no difference in verbal estimates of potential aggressive acts (1) for children exposed to aggressive and nonaggressive content in Collins' study utilizing aggressive acts with bad motivations and consequences and a travelogue about California; (2) in the study utilizing four tapes edited to produce different combinations of good and bad motivations and consequences and a travelogue about Austria; and (3) in the

thirteen-year-old validation utilizing a knife-fight scene and a family-life comedy. There was a nearly significant difference in (1) the tendency to give high intensity electric shock in the thirteen-year-old validation study utilizing the same knife-fight scene and family-life comedy and (2) in the tendency to choose verbally aggressive solutions to interpersonal conflict in the thirteen-year-old validation utilizing a boxing sequence and a travelogue about Austria.

Finally, there was a notable tendency (1) to play more aggressively with toys and to choose more aggressive solutions to interpersonal conflict after exposure to aggression with both positive and negative consequences than after exposure to active, nonaggressive play in the four-year-old validation study and (2) to indicate that one would resolve interpersonal conflict with physical aggression after viewing more violent programs than after viewing less violent programs in the study with full half-hour programs.

These overall findings include some fairly consistent differences with age in choice of aggressive solutions to interpersonal conflict, with the pattern of differences depending upon the viewing stimulus. Without exposure to any television stimulus the frequency of aggressive choices is a U-shaped function of age. This pattern was found in the pretesting of 24 items from which the 9 best were selected and in the study involving edited tapes. In the first instance the least aggressive children were the seven-year-olds with aggression increasing from then to sixteen years of age and preschoolers about as aggressive as sixteen-year-olds. In the second instance only three age points were measured and preschoolers and twelfth graders were about equally aggressive, while fifth graders were

considerably less aggressive. Collins also measured aggressive choices without exposure to any television stimulus and found increasing aggressiveness from third through sixth and tenth grades (about eight to sixteen years of age). This finding is quite consistent with the hypothesized U-shaped curve for aggressive choices over the ages three to eighteen.

Aggressive choices apparently increase with age after exposure to a nonaggressive television stimulus. Collins found increasing aggressiveness from third through tenth grade after the children viewed a travelogue about California, and the edited tapes study showed increasing aggressiveness from preschool through fifth and twelfth grades after viewing travelogue on Austria.

Such increases were not found after viewing aggressive stimuli. Rather an inverted U-shaped pattern was found for choice of physical aggression after exposure to aggressive content. Nolan found such a pattern using fourth, seventh and tenth graders. Collins found such a pattern using third, sixth, and tenth graders. Such a pattern was found for kindergarteners, third, sixth, ninth, and twelfth graders after they viewed full-length television programs. Such a pattern was not, however, found in the study using tapes edited to manipulate motivations and consequences for aggression. In this instance there was a decrease in aggressive choices from preschool to fifth to twelfth grades. The reason for this one disparity is not apparent, although it may be due to the inclusion of preschool children. The pattern of results for the fifth and twelfth graders corresponds to that of the other three studies. Since none of the other three studies includes children nearly as young as the preschoolers in the edited tapes study, the reliability of this exception to the inverted U-shaped pattern cannot be assessed.

These results suggest that aggressive displays, whatever their motivations or consequences, become increasingly effective in producing aggressive behavior as children mature from preschool to early adolescence, and that this effectiveness decreases from early adolescence on. This may be seen most clearly in three studies: Collins' study, the edited tapes study, and the unedited tapes study. The Collins and edited tapes studies both used the Silent Force tape (bad motivations and bad consequences for aggression) and a travelogue. While the subject populations, the travelogues, and the Silent Force tapes differed somewhat, the results from the two studies may still be combined to examine the pattern of age differences in aggressiveness of children who watched the aggressive Silent Force tape and those who watched the nonaggressive travelogue. The difference between the means for these two groups increases from preschool through sixth grade and then decreases through tenth and twelfth grades. A similar pattern was found in comparisons over age of the difference in the number of aggressive choices of children who watched Felony Squad, the most violent program in the unedited tapes study, and those who watched Batman, the least violent program in the same study. Five grades were studied here and once again the inverted U-shaped pattern with age holds for the difference in aggressiveness after viewing more and less violent programs, with the peak at sixth grade.

These effects hold for both boys and girls, who have been included in all studies, although our work has not been directed at discovering sex differences in responses to aggressive stimuli and the motivations and consequences associated with it. Boys have, in almost all studies and at almost all ages, chosen aggression more often than

girls, but the experimental stimuli apparently do not affect boys and girls differently. Rarely was there any interaction between the sex of the subject and any of the experimental manipulations employed nor was there ever any significant effect for sex when change scores (after test minus before test) were used as dependent measures.

This use of both boys and girls as subjects in all studies is one of the positive aspects of the work reported here. There are other desirable features that should also be noted. For instance, we have used experimental stimuli that are either exact copies of current television programs, including commercials, or somewhat edited copies of current programs rather than shorter excerpts or specially produced stimuli. Moreover, we have used many different programs and types of programs. We have also used a dependent measure that is conceptually close to the everyday resolution of interpersonal conflict -- the area that we hope to extrapolate to. Finally, we have carried out our work across a number of ages, utilizing similar stimuli, procedures, and measures wherever possible without totally sacrificing their meaningfulness for children of any age.

There are, however, a number of limitations in our work that should also be noted. The viewing situation was not that which a child experiences in his home, where most of his viewing is done. Effects of exposure were measured immediately after viewing and after only one exposure to the specified television content. Moreover, the dependent measure, while conceptually close to real-life behavior, was a verbal estimate of probable behavior rather than a measure of the actual behavior. This measure also may not be equally sensitive for children of all the ages

we studied. It was validated for preschoolers and fifth graders, but not for thirteen-year-olds. However, its validity for adolescents is still in question since sex differences in aggressiveness in the measure were apparent with almost all the adolescent groups we studied and behavioral measures of aggressiveness after exposure to aggressive and nonaggressive content showed little difference at thirteen.

Given these strengths and limitations, there are some conclusions that one might draw -- at least tentatively -- from the series of studies that has been reported here. While children, as they grow up, understand more about the television programs they view, there is little indication that the motivations and consequences for aggression these programs portray influence the aggressive tendencies of children who have viewed them. It is reasonable to suggest that this is because of the nature of the portrayal rather than an inherent inability of children of any age to be influenced by the motivations for and consequences of aggressive acts they observe. There is rather clear evidence that exposure to current television programs that include aggressive acts produces greater subsequent aggression than one would find without such exposure. This effect increases as children mature to early adolescence and then decreases through adolescence. None of the results are, of course, in themselves the final proof-positive of anything. Yet in conjunction with other evidence already available and that which may appear in the future they may allow us to understand something of the effects on children of different ages of viewing contemporary television.

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APPENDICES

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Section VI Appendices continued

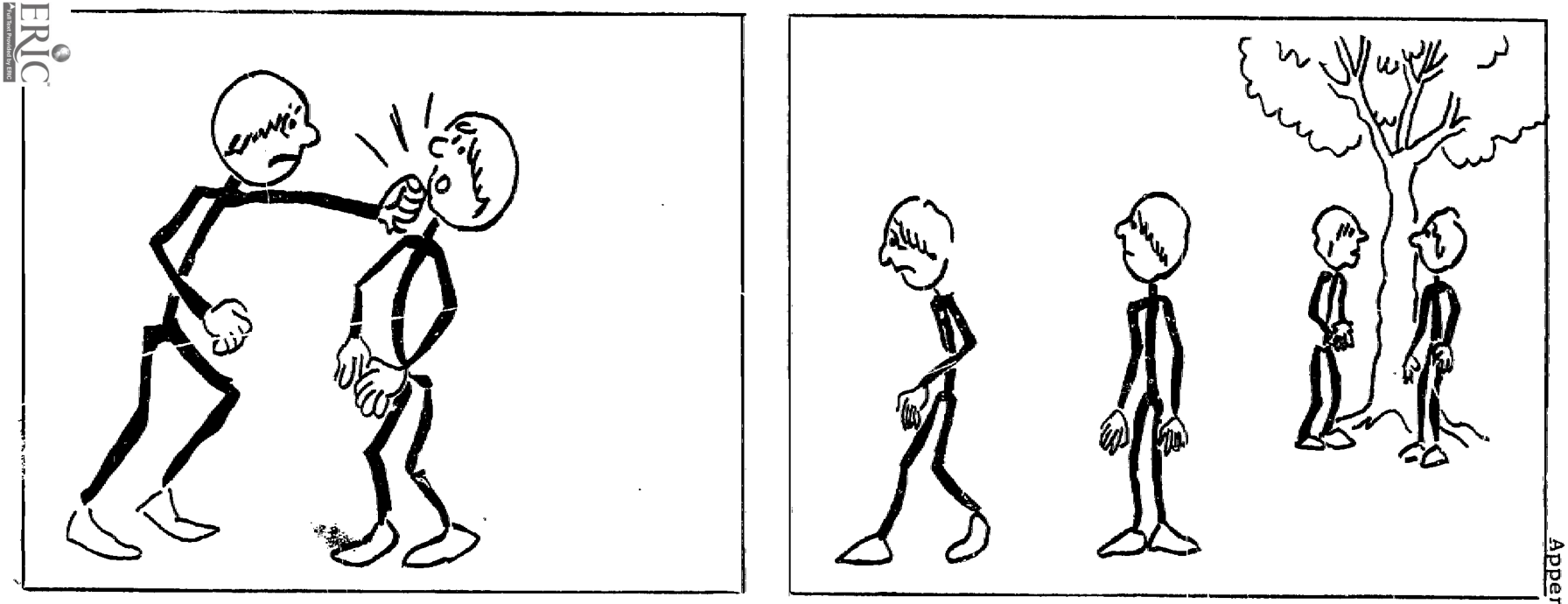
Appendix A-II

Sample of a Complete Response Hierarchy Item

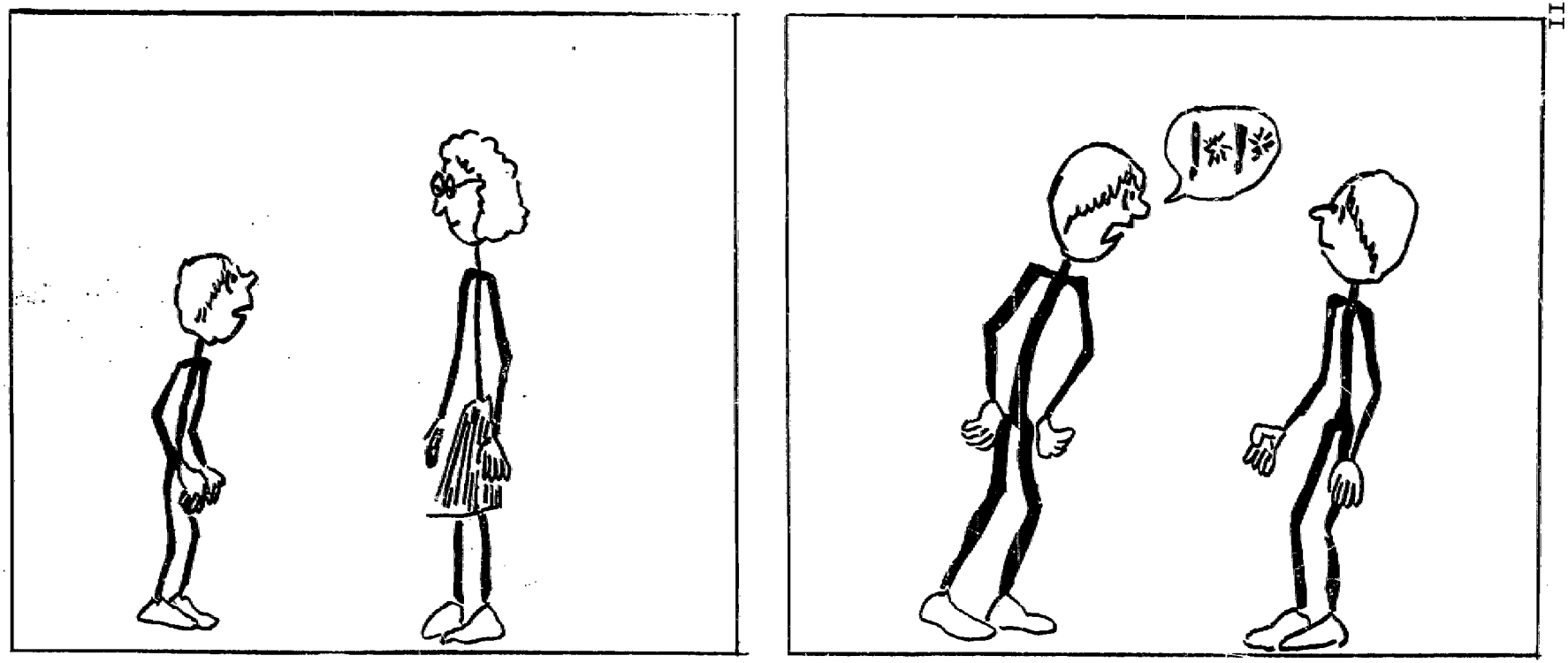
"You're walking down the street. Some kid is mad at you and comes up and hits you. What do you do?"

(responses on following pages)

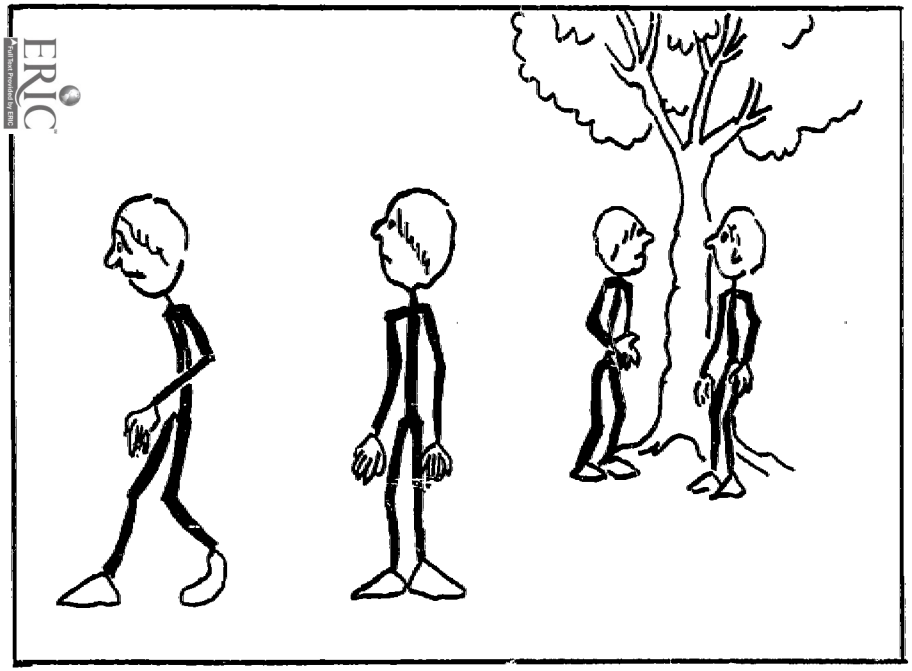
(See page II-5)

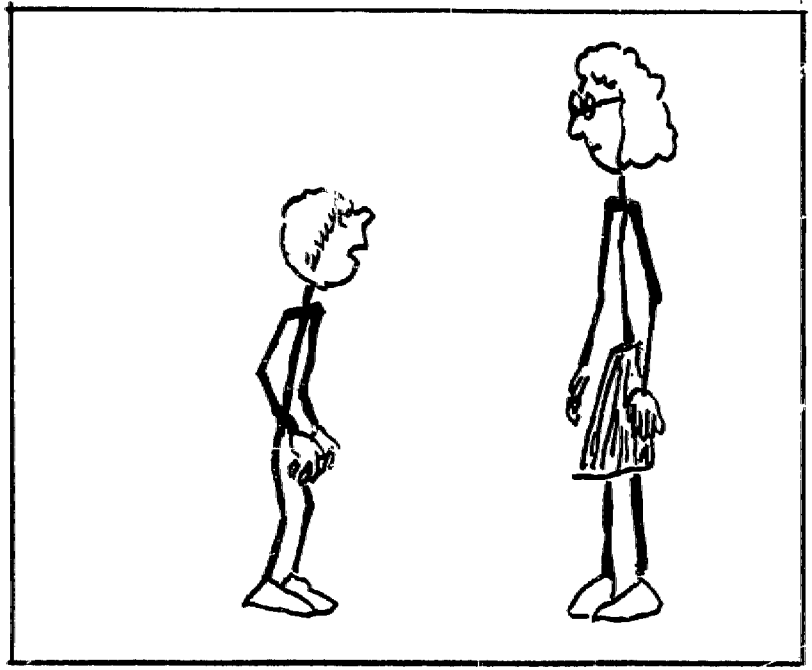


A. HIT THEM OR LEAVE THEM?

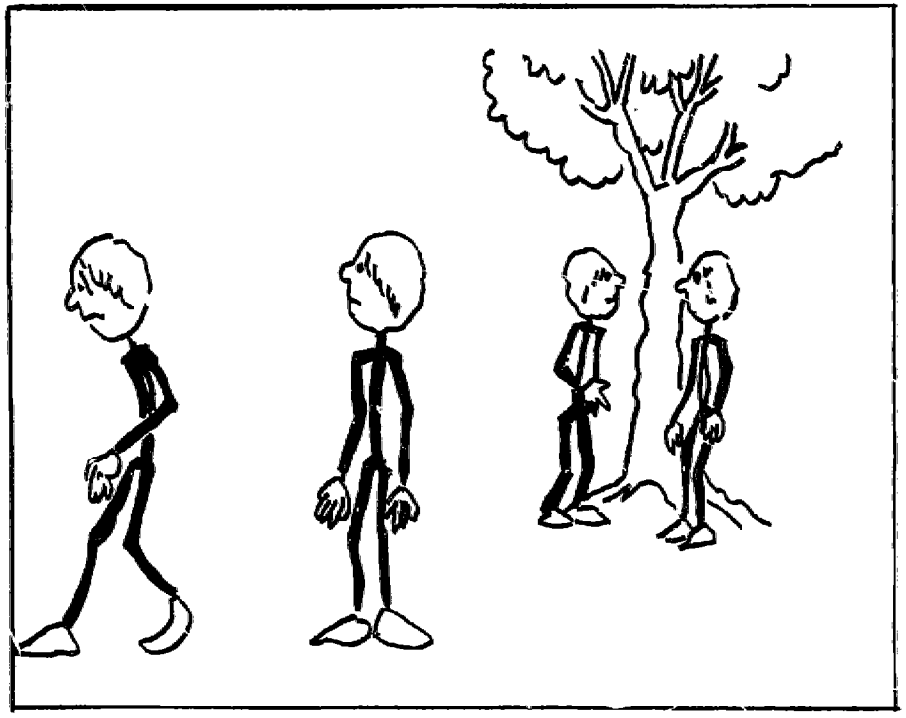


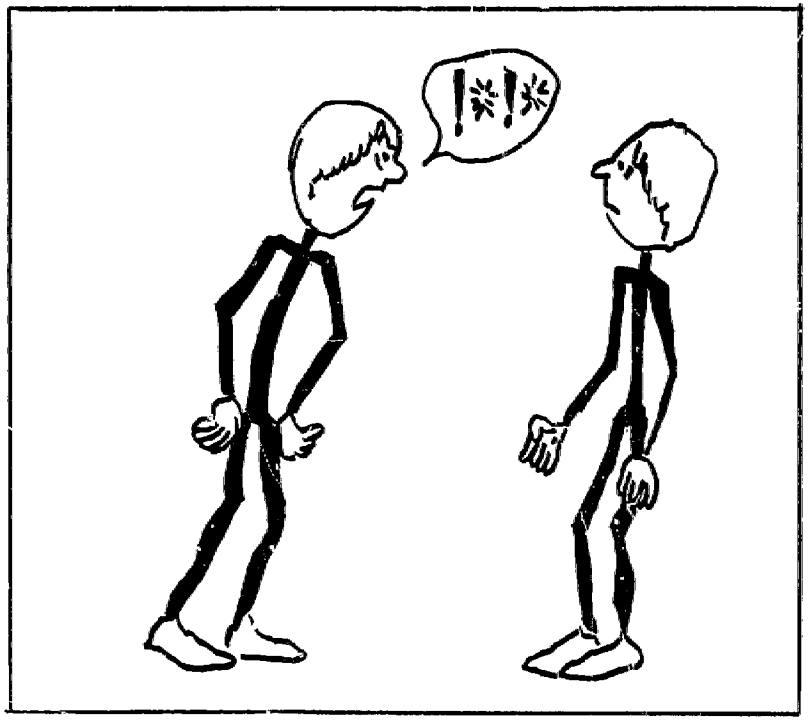
B. TELL A GROWN-UP OR CALL THEM "STUPID"?



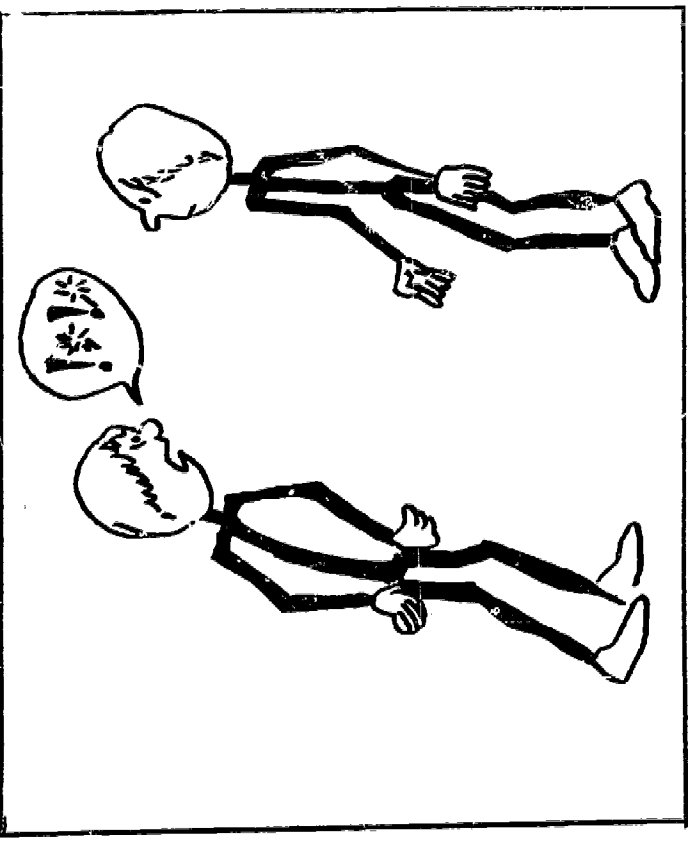


C. LEAVE THEM OR TELL A GROWN-UP?

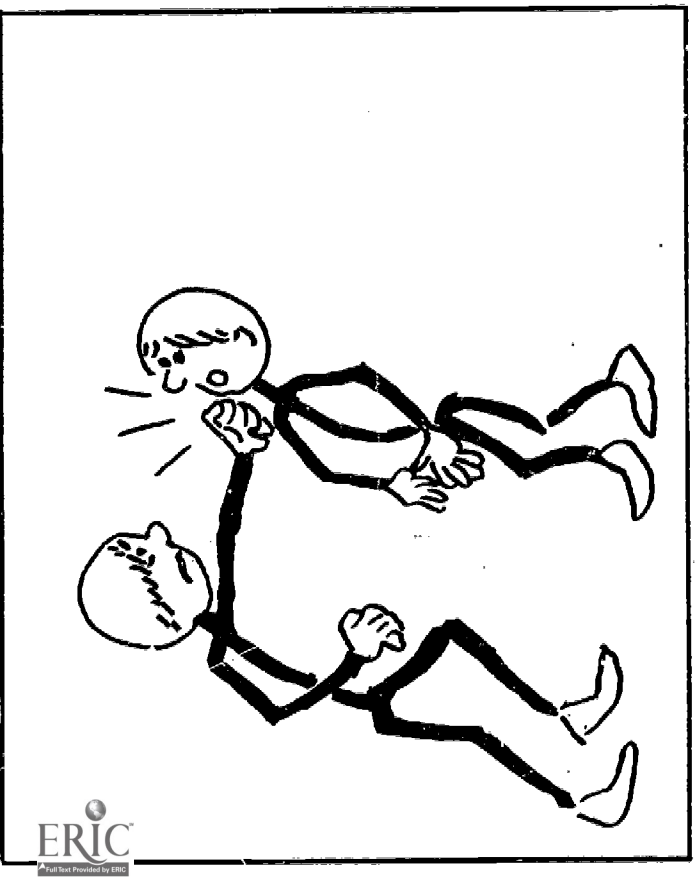


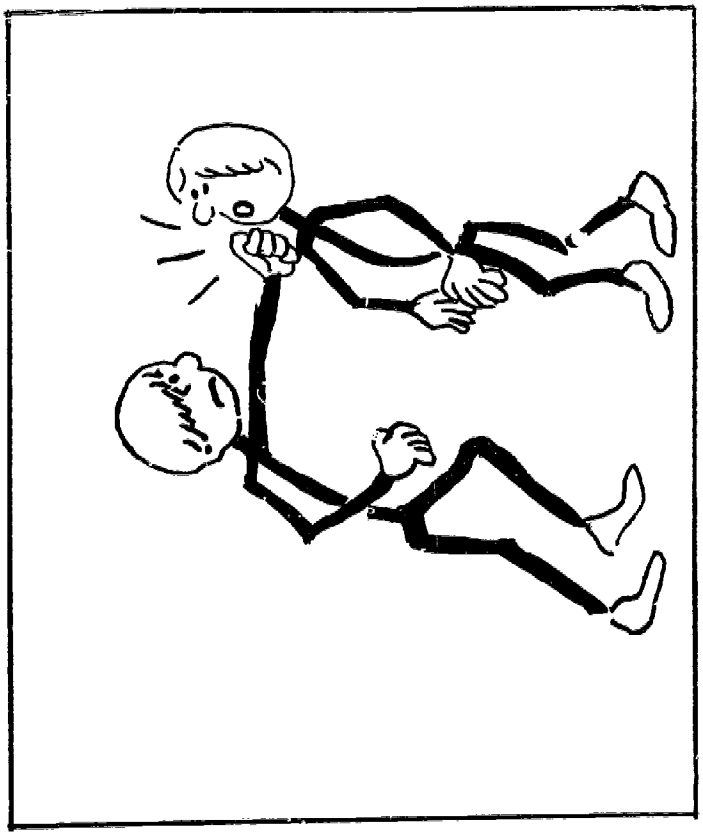


D. LEAVE THEM OR CALL THEM "STUPID"?

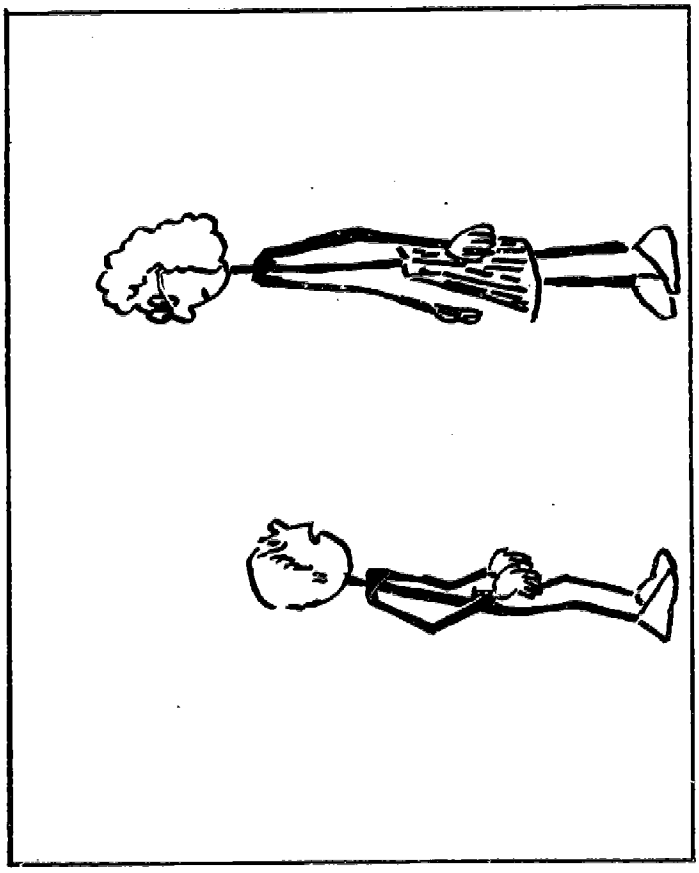


E. HIT THEM OR CALL THEM "STUPID"?





F. TELL A GROWN-UP OR HIT THEM?



Appendix B-II

Instructions for Response Hierarchy
4 and 7 Year-Old Ss, Pictures

1. Introduction (on way to room):

I'd like you both to help me finish some stories I have.

2. Instructions:

This is what we'll do today. I'll read a short story. A story about something that could happen to you. Then, I want to know what you would do about it. When I've finished the story, I'll show you some pictures. You mark the picture that shows what you'd do if this happened to you.

Open the test booklet to the first practice item and place it before each S.

Here are some pictures for us to practice on.

Give each S a color.

And here are the colors for you to use when you mark the picture that shows what you would do.

3. Practice Items:

Here's the story. You are standing outside. Someone comes along and asks you, "Are you a boy or a girl?" What do you do? Do you say, "I'm a boy" or "I'm a girl?" Take your color and mark the picture that shows what you would say.

Let's look at the next pictures.

Here's another story. You come home and your mother asks which is better for your health -- a cookie or a cigarette. What do you say? A cookie or a cigarette? Take your color and mark what you'd do.

That's interesting. I like that.

4. Experimental Items:

Let's go on to some more stories. Remember, I'll read a story about something that might happen to you. You listen carefully. When I've finished, I'll show you some pictures. You mark the picture which shows what you'd do if this happened to you. You can only choose one picture each time, so choose carefully. Sometimes you won't want to choose either picture. But choose one anyhow, just to finish the story. Let's turn to the next page.

NB: If Ss want to change their responses, E crosses out first response and permits S to mark his second choice.

5. Thank Ss after completion of experimental session.

(See page II-5)

Appendix B-II

Instructions for Response Hierarchy

10 Year-old Ss, Pictures

1. Introduction:

I'd like to find out how you feel about different things that could happen to you.

2. Instructions:

First of all, I need to know something about you. Take your booklet. On the back of the last page write your initials, your birthdate, and today's date. Also write an M or F for your sex.

Good. Now turn your booklet over so that it is right-side-up again. This is what we'll do today. I'll read a short description of something that could happen to you. Then, I want to know what you would do about it. When I've read the description we'll look at sets of pictures in the booklet. Each page has two pictures on it. You mark one picture on each page that shows what you'd do if this happened to you.

3. Practice Items:

There are some pictures for us to practice with.

Here's the situation. You are standing outside. Someone comes along and asks you, "Are you a boy or girl?" What do you do? Do you say, "I'm a boy" or "I'm a girl?" Take a pencil and mark the picture that shows what you would say.

Now, let's look at the next pictures. Turn your booklet to the second page. Here's the next situation. You come home and your mother asks you which is better for your health -- a cookie or a cigarette. What do you say? A cookie or a cigarette? Take your pencil and mark what you'd do.

That's good.

4. Experimental Items:

Let's go on to some more situations. Remember, I'll read a description of something that could happen to you. Then I want to know what you would do about it. You look at the pictures and mark the one that shows what you'd do if it happened to you. You can only choose one picture at a time, so choose carefully. Sometimes you won't want to choose either picture. But choose one anyhow. There will be six pages of pictures for each situation. So you'll make six choices and then we'll go on to the next situation. Let's turn to the next page now.

NB: If Ss want to change their responses, E tells them to cross out their first response and mark their second choice.

Appendix B-II

5. At End:

There, that finishes the booklet. Thank you for your help. Do you have any questions about what we did or why we're doing it? (Give straight explanations about what we're doing and why, but don't focus on violence.)

(See page II-5)

Appendix B-II

Instructions for Response Hierarchy

10, 13, and 16 Year-old Ss, Slides

1. Introduction:

I'd like to find out how you feel about different things that could happen to you.

2. Instructions:

First of all, I need to know something about you. Take your answer sheets. There should be two pages. On the upper right of each page, write your date of birth and your initials on the first line. Then write M or F for your sex. Where it says Card Set, write _____. Where it says Experimenter, write _____.

This is what we'll do today. I'll read a short description of something that could happen to you. Then, I want to know what you would do about it. When I've read the description, I'll show you some slides. Each slide will have two pictures on it, one marked A and the other marked B. Take your answer sheet and circle A if it shows what you'd do in the situation. Circle B if it shows what you'd do.

3. Practice Items:

There are two items for us to practice with. They're labelled P1 and P2 on your answer sheet.

Here's the situation. You are standing outside. Someone comes along and asks you, "Are you a boy or a girl?" What do you do? Do you say, "I'm a boy" or "I'm a girl?" (Slide) Take your pencil and circle either A or B on the answer sheet.

Here's the next situation. You come home and your mother asks you which is better for your health -- a cookie or a cigarette. What do you say? A cookie or a cigarette? Take your pencil and circle what you'd do.

4. Experimental Items:

Let's go on to some more situations. Remember, I'll read a description of something that could happen to you. Then, I want to know what you would do about it. You look at the slides and mark on the answer sheet the one that shows what you'd do if it happened to you. You can only choose one picture at a time, so choose carefully. Sometimes you won't want to choose either picture. But please choose one anyhow. There will be six slides for each situation. So you'll make six choices and then we'll go on to the next situation.

Appendix B-II

NB: If Ss want to change their responses, E tells them to cross out the first response and circle their second choice.

5. At End:

There, that finishes all the slides. Thank you for your help. Do you have any questions about what we did or why we're doing it? (Give straight explanations about what we're doing and why, but don't focus on violence.)

(See page II-5)

Appendix C-II

Response Hierarchy

Final Item Set -- 4-10 Years

1. You're walking down the street. Some kid is mad at you and comes up and hits you. What do you do?
   a. Hit them
   b. Call them "Stupid"
   c. Leave them
   d. Tell a grown-up

2. You're standing in line for a drink of water. A kid comes along and just pushes you out of line. What do you do?

   a. Push them
   b. Call them a bad name
   c. Go away
   d. Say "That's all right"

3. You're playing a game with your friends. Someone takes your turn. What do you do?
   a. Push them
   b. Call them "Slob"
   c. Go into the house
   d. Tell them not to take your turn

4. You're playing a game and you keep making mistakes. Your friends start making fun of you. What do you do?
   a. Throw something at them
   b. Call them "Stupid"
   c. Go someplace else
   d. Say "That's all right"

5. You've just finished making something. Someone comes along and messes it up. What do you do?
   a. Hit them
   b. Call them a bad name
   c. Go away
   d. Say "That's all right"

6. Your friend promised to walk home with you. Then you see your friend walking home with somebody else. What do you do?
   a. Throw something at them
   b. Yell at them
   c. Go away
   d. Say "That's all right"

(See page II-6)

Appendix C-II

Response Hierarchy

Final Item Set -- 10-16 Years

1. You're walking down the street. Some kid is mad at you and comes up and hits you. What do you do?
   a. Hit them
   b. Call them "Stupid"
   c. Leave them
   d. Tell a grown-up

2. You're standing in line for a drink of water. A kid comes along and just pushes you out of line. What do you do?
   a. Push them
   b. Call them a bad name
   c. Go away
   d. Say "That's all right"

3. You're playing a game with your friends. Someone takes your turn. What do you do?
   a. Push them
   b. Call them "Slob"
   c. Go into the house
   d. Tell them not to take your turn

4. As you're leaving school you see two kids fighting with your best friend. What do you do?
   a. Push them
   b. Call them a bad name
   c. Leave them
   d. Tell the teacher

5. You've just heard that someone you thought was your friend has been making up stories behind your back. You encounter them after school. What do you do?
   a. Slap them
   b. Call them a bad name
   c. Go away
   d. Tell the teacher

6. You're playing a game and you're not doing so well. So somebody else starts taking over your plays. What do you do?
   a. Slap them
   b. Yell at them
   c. Go someplace else
   d. Tell the teacher

(See page II-6)

Appendix D-II

ANOVA Tables
Four-Year-Old Validation

Imitative Aggression

Source	df	MS	F
A - Videotape	2	26.43	< 2
B - Sex	1	86.70	3.55[a]
A B	2	31.30	< 2
Within	24	24.45	

(See page II-11)

Non-imitative Aggression

	Three Ss Deleted, Raw Scores			All Ss, Transformed Scores		
Source	df	MS	F	df	MS	F
A - Videotape	2	906.93	3.77*	2	.01	< 2
B - Sex	1	0.14	< 2	1	.01	< 2
A B	2	6944.94	28.84**	2	.08	6.17**
Within	21	240.78		24	.01	

(See page II-11)

[a] $p < .10$
* $p < .05$
** $p < .01$

Appendix D-II

ANOVA Tables
Four-Year-Old Validation

	Physical Aggression			Verbal Aggression			Physical + Verbal Aggression		
Source	df	MS	F	df	MS	F	df	MS	F
A - Videotape	2	55.77	5.91**	2	22.40	3.37*	2	106.08	5.73**
B - Sex	1	0.08	< 2	1	1.69	< 2	1	3.00	< 2
A B	2	7.90	< 2	2	0.06	< 2	2	7.75	< 2
Within	42	9.44		42	6.64		42	18.51	

(See page II-13)

* $p < .05$

** $p < .01$

Appendix D-II

ANOVA Tables
Thirteen-Year-Old Validation

Shock Intensity
(Before Test Score as Covariate)

Source	df	MS	F
A - Sex	1	0.18	< 2
B - Videotape	1	4.23	3.50[a]
C - Experimenter	1	0.23	< 2
A B	1	1.38	< 2
A C	1	0.50	< 2
B C	1	0.04	< 2
A B C	1	0.07	< 2
Within	23	1.21	

(See page II-15)

	Physical Aggression			Verbal Aggression			Physical + Verbal Aggression		
	(Before Test Score as Covariate)								
Source	df	MS	F	df	MS	F	df	MS	F
A - Sex	1	.001	< 2	1	.018	< 2	1	.012	< 2
B - Videotape	1	.000	< 2	1	.006	< 2	1	.003	< 2
C - Experimenter	1	.228	9.91**	1	.026	< 2	1	.059	< 2
A B	1	.006	< 2	1	.002	< 2	1	.000	< 2
A C	1	.036	< 2	1	.042	< 2	1	.002	< 2
B C	1	.060	2.61	1	.002	< 2	1	.084	< 2
A B C	1	.075	3.26[a]	1	.000	< 2	1	.055	< 2
Within	31	.023		31	.023		31	.051	

(See page II-15)

[a] $p < .10$
* $p < .05$
** $p < .01$

Appendix D-II

Thirteen-Year-Old Validation

Mean Combined After Scores for Transformed Response Hierarchy Physical Aggression by Sex, Experimenter, and Videotape Condition

	Aggressive Videotape			Non-Aggressive Videotape		
	E_1	E_2	E_3	E_1	E_2	E_3
Girls	1.44 N=5	3.39 N=5	.80 N=10	1.20 N=5	1.18 N=5	1.58 N=9
Boys	2.97 N=5	1.59 N=5	2.59 N=9	3.10 N=5	3.36 N=5	2.74 N=10

(See page II-15)

ANOVA Table

Transformed Physical Aggression Score

Source	df	MS	F
A - Sex	1	29.10	8.79**
B - Videotape	1	0.74	< 2
C - Experimenter	2	1.46	< 2
A B	1	3.08	< 2
A C	2	5.48	< 2
B C	2	1.18	< 2
A B C	2	8.56	2.59
Within	66	3.31	

(See page II-15)

** $p < .01$

Appendix D-II

Thirteen-Year-Old Validation

Mean Response Hierarchy Scores by Sex and Videotape Condition
For Second Thirteen-Year-Old Validation Using The Champion

		Physical Aggression		Verbal Aggression		Physical + Verbal Aggression	
		Aggressive	Non-Aggressive	Aggressive	Non-Aggressive	Aggressive	Non-Aggressive
Girls	$\bar{x}$	8.33	9.77	12.92	11.00	21.25	20.77
	sd	4.15	2.42	3.07	3.76	4.47	4.64
	N	12	13	12	13	12	13
Boys	$\bar{x}$	9.80	9.86	12.20	10.43	22.10	20.29
	sd	2.98	2.23	1.99	2.87	3.67	3.84
	N	10	7	10	7	10	7

(See page II-17)

ANOVA Tables

	Physical Aggression			Verbal Aggression			Physical + Verbal Aggression		
Source	df	MS	F	df	MS	F	df	MS	F
A - Videotape	1	5.96	< 2	1	33.60	3.24[a]	1	11.25	< 2
B - Sex	1	6.51	< 2	1	2.04	< 2	1	1.26	< 2
A B	1	5.58	< 2	1	0.48	< 2	1	4.55	< 2
Within	38	10.70		38	10.37		38	19.97	

(See page II-17)

[a] $p < .10$

Appendix D-II

ANOVA Tables
Fifth Grade Validation

	Physical Aggression			Verbal Aggression			Physical + Verbal Aggression		
Source	df	MS	F	df	MS	F	df	MS	F
A - Sex	1	0.03	< 2	1	0.41	< 2	1	0.22	< 2
B - Rated Aggression	1	2.80	4.69*	1	0.17	< 2	1	4.36	3.33[a]
A B	1	0.41	< 2	1	0.01	< 2	1	0.38	< 2
Within	30	0.60		30	0.33		30	1.31	

(See page II-19)

[a] $p < .10$

* $p < .05$

Appendix E-II

Teacher Rating Form for Fifth Grade Validation

To: Fifth Grade Teachers, Slater School

From: Don Roberts, Stanford University

Re: Television and violence study: aggression ratings

On the following pages we have listed all of the 5th grade students at Slater School who took part in the study of television violence we are conducting. It will be of great help in the interpretation of our results if the teachers of these students would each give us an independent rating of how aggressively each participant generally behaves in the school environment, relative to his classmates. We will correlate your ratings with the responses given by the children in the experiment in order to check whether or not our measure has any relation to "real world" behavior.

We are interested in overt forms of aggression such as hitting, shoving, name calling, etc., rather than in more subtle, psychological forms of aggression.

These ratings will remain completely anonymous; individual names of the children will be destroyed as soon as the data are prepared for analysis.

The following pages list all of the students participating; each name is followed by a series of boxes ranging from "very aggressive" to "very unaggressive." Simply check the box which best describes the usual behavior of each child. The names are listed by class for the sake of convenience. However, we are asking each of you to rate <u>all</u> of the 5th grade students, regardless of whether or not they are in your class. Such multiple ratings should make the data more accurate. If you feel that you do not know enough about a student to make any judgment, simply mark the box at the far left of the page. Finally, we would like to request that you do not consult with the other teachers when making these ratings.

Thank you for your help.

(See page II-18)

Appendix E-II

Teacher Rating Form for Fifth Grade Validation

Relative to other 5th grade students, _____ is:

	very aggressive	rather more aggressive than average	a bit more aggressive than average	about average in aggressive behavior	a bit less aggressive than average	rather less aggressive than average	very unaggressive	don't know well enough to rate
S_1 *								
S_2								
S_3								
S_4								
S_5								
S_6								
S_7								
S_8								
S_9								
S_{10}								

* Students were listed alphabetically by name

Appendix A-III

Adult Rating of Television Programs

Definitions for Rating Television Programs

VIOLENCE

Violence is defined as a physical act that hurts some person, animal, or object -- or as a physical act that could hurt some person, animal, or object if it were successfully carried out. Verbal threats, intimidation, or expressions of anger are not considered violent. Accidents, acts of God, or natural calamities such as lightning, hurricanes, faulty equipment, etc., may be violent.

VIOLENT EPISODE

A violent episode begins with an act of violence. It may include the violent act, what happens to the person who receives that act, the response of this person to the violence and what happens to him then, and what happens to the person who performed the first violent act. Usually all this will take place in one setting, and a change in setting is a good clue that the violent episode has ended.

Occasionally one episode may be made up of a number of incidents that you feel should be coded separately. When this occurs give the whole episode one name and then fill out as many rating forms as there are significant incidents. You should not have to do this often.

CHARACTER WHO IS FIRST VIOLENT

A violent act may be performed by a person, animal, or cartoon character. Or it may have no individual who performs the act -- like lightning striking a house, a bridge collapsing, a rock falling. The person, animal, or object who was first violent is the one who hits first, shoots a gun first, draws a gun first, etc. -- even if he has a very good reason for doing so.

CHARACTER WHO RECEIVED FIRST VIOLENCE

A violent act must be directed at or affect a person, animal, or object (including cartoon characters). The person, animal, or object who received first violence is the one who is hit first, shot at first, etc., -- whether or not he deserves what he got.

(See page III-4)

Appendix A-III

Adult Rating of Television Programs

Name of first violent episode	Name of person, animal or object who was first violent.	Name of person, animal or object who received first violence.
The reason for each person's action was	G N B ?	G N B ?
The immediate outcome of this episode for each person was	G N B ?	G N B ?
By the end of the program the fate of each person was	G N B ?	G N B ?
Each person's character could be described as	G N B ?	G N B ?
The response of the person who received the first violent act was	violent / / / / / / / / non-violent	

Name of second violent episode	Name of person, animal or object who was first violent.	Name of person, animal or object who received first violence.
The reason for each person's action was	G N B ?	G N B ?
The immediate outcome of this episode for each person was	G N B ?	G N B ?
By the end of the program the fate of each person was	G N B ?	G N B ?
Each person's character could be described as	G N B ?	G N B ?
The response of the person who received the first violent act was	violent / / / / / / / / non-violent	

Name of third violent episode	Name of person, animal or object who was first violent.	Name of person, animal or object who received first violence.
The reason for each person's action was	G N B ?	G N B ?
The immediate outcome of this episode for each person was	G N B ?	G N B ?

Appendix A-III

Adult Rating of Television Programs (continued)

By the end of the program the fate of each person was	G N B ?	G N B ?
Each person's character could be described as	G N B ?	G N B ?
The response of the person who received the first violent act was	violent / / / / / / / /	non-violent

(See page III-4)

Appendix B-III

Sample Item with Illustrat... rom Understanding Test

1. Why did the Great Sphinx destroy Rocket Robin Hood's spaceship?

   a. Because King Tut asked him to
   b. Because Robin's spaceship attacked him
   c. Because Ezra was trapped inside
   d. Because the mummies ordered him to

   Good Good and Bad Bad Don't Know (Evaluation of motive)

2. Why did Robin and his men fight with the Great Sphinx?

   a. Because the Sphinx tried to eat them
   b. Because the Sphinx had radioed King Tut to get them
   c. Because the Sphinx' gears were jammed
   d. Because the Sphinx was about to crush Ezra

   Good Good and Bad Bad Don't Know (Evaluation of motive)

3. What happened to the Sphinx after it destroyed Rocket Robin Hood's spaceship?

   a. It was rewarded by the people of Nylor
   b. It was destroyed by Rocket Robin Hood's men
   c. It was destroyed by King Tut
   d. It flew into King Tut's palace

   Good Good and Bad Bad Don't Know (Evaluation of consequence)

4. What happened to Robin and his men after the Sphinx destroyed their spaceship?
   a. They fell to the ground
   b. They were saved by Ezra
   c. They had to leave Nylor
   d. They managed to escape

   Good Good and Bad Bad Don't Know (Evaluation of consequence)

5. What happened to the Great Sphinx at the end of the show?

   a. King Tut thanked it for a job well done
   b. It crashed to the ground
   c. The people of Nylor made it a national hero
   d. It was sent with King Tut to the caves of Nylor

   Good Good and Bad Bad Don't Know (Evaluation of consequence)

   The Great Sphinx was ...good good and bad bad don't know

Appendix B-III

Sample Item with Illustrations from Understanding Test

6. What happened to Robin and his men at the end of the show?

a. They took Ezra with them in the spaceship
b. They had to get back to their old jobs
c. They rode off in the tax wagon
d. They sent King Tut to the caves of Nylor

Good Good and Bad Bad Don't Know (Evaluation of consequence)

Robin and his men were ... good good and bad bad don't know

(See page III-6)

Why did the Great Sphinx destroy Rocket Robin Hood's spaceship?

(a)

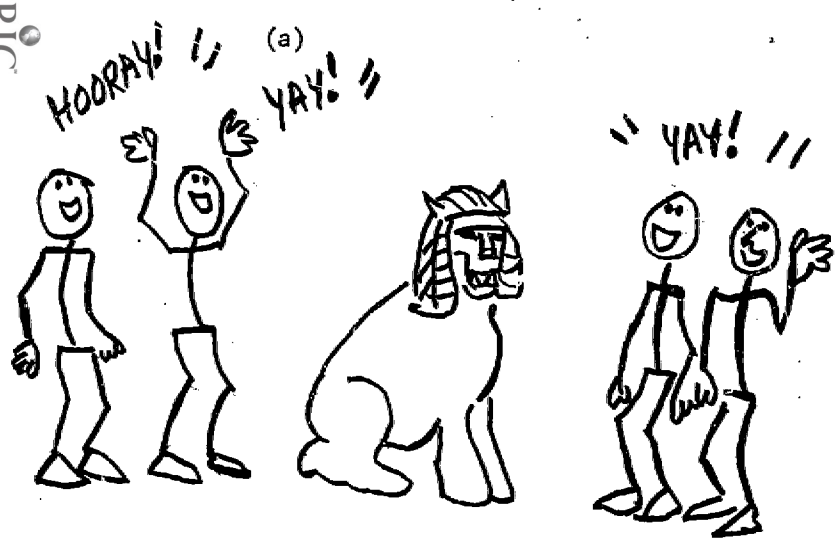
(b)

(c)

(d)

Why did Robin and his men fight with the Great Sphinx?

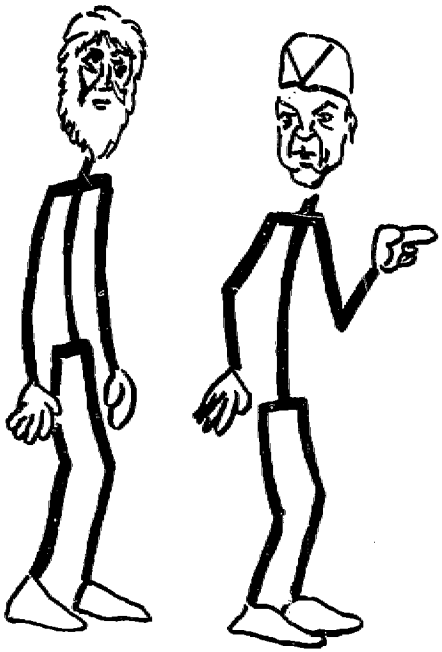
(a)

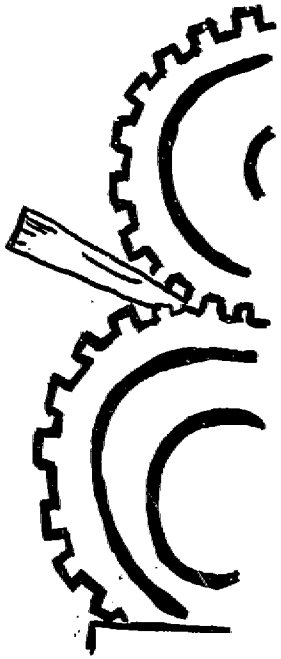


(b)

What happened to the Sphinx after it destroyed Rocket Robin Hood's spaceship?

(c)





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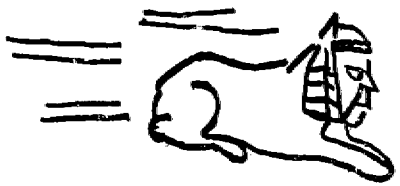
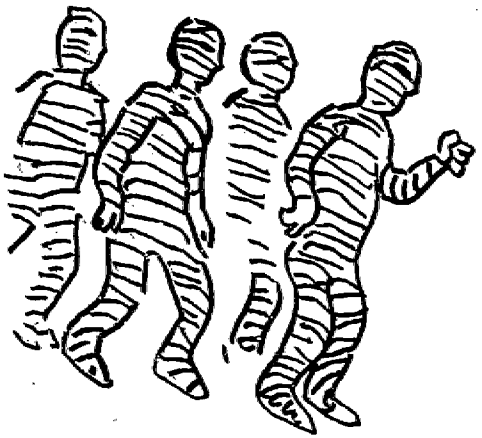
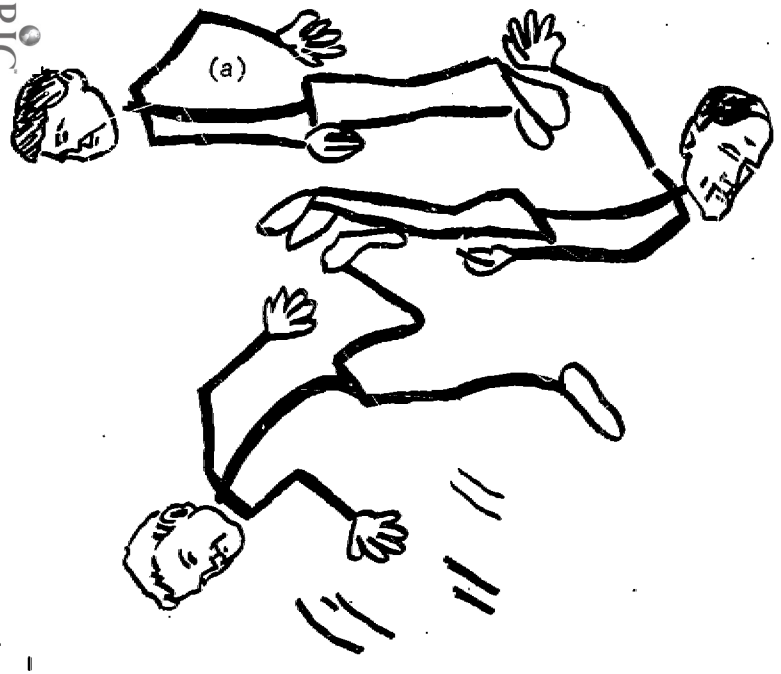
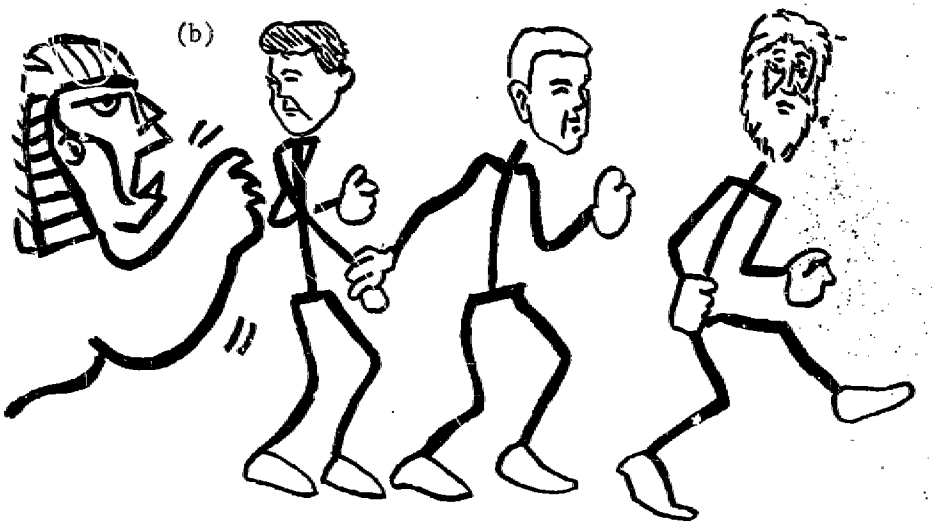
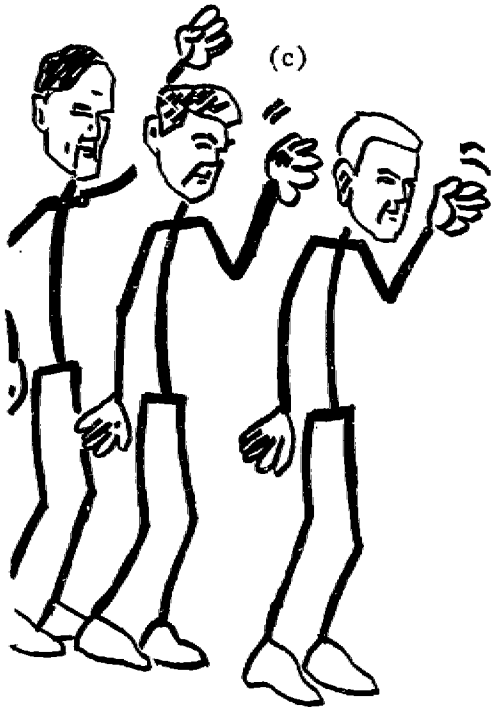


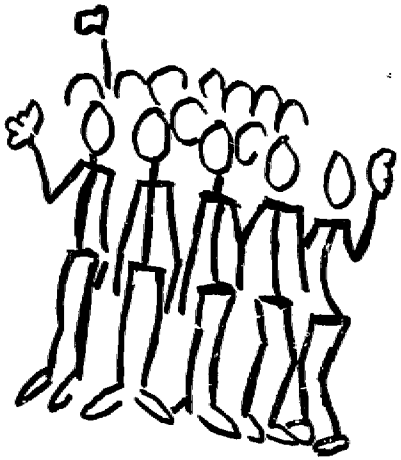




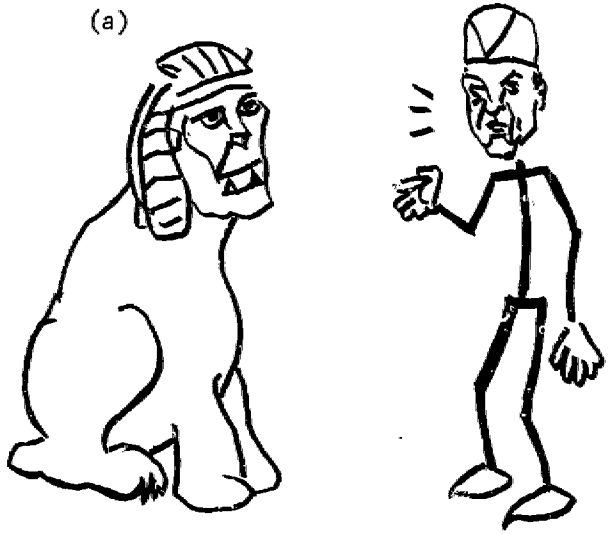


What happened to Robin and his men after the Sphinx destroyed their spaceship?





(a)

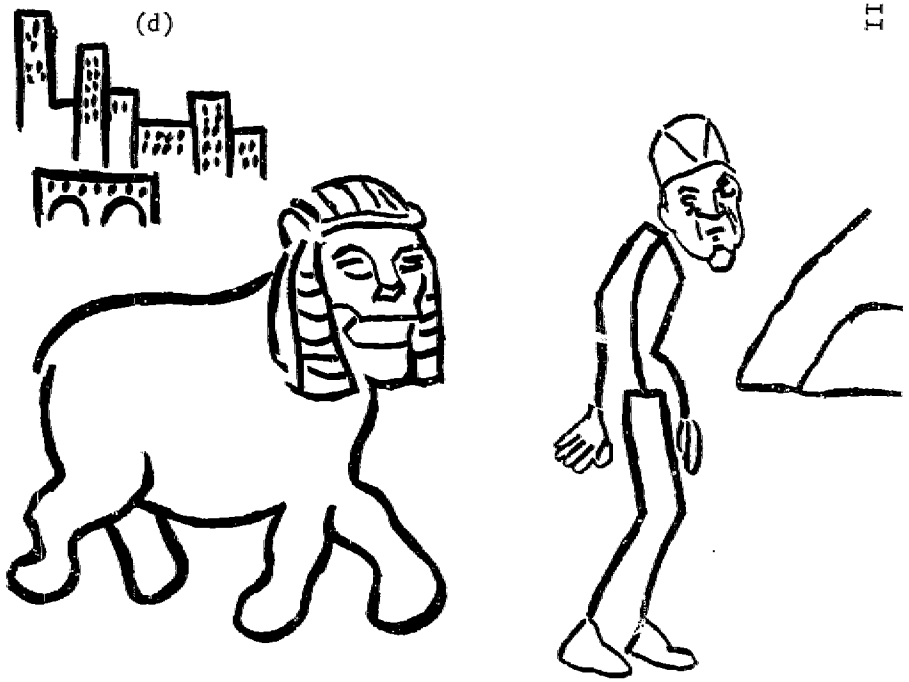


(b)

What happened to the Great Sphinx at the end of the show?

(c)

(d)



What happened to Robin and his men at the end of the show?

Appendix C-III

ANOVA Tables

Nested Factors ANOVAs for Arcsin Understanding Scores
Primary Set of Episodes
Grades K, 3, 6, 9, 12

	Motivations			Immediate Consequences			Final Consequences		
Source	df	MS	F	df	MS	F	df	MS	F
A - Grade	4	5.24	60.17**	4	3.34	40.74**	4	3.12	29.13**
Linear	1	18.48	217.45**	1	12.56	153.11**	1	12.09	113.01**
Quadratic	1	1.96	23.01**	1	0.42	5.18*	1	0.34	3.18[a]
Rest	2	0.25	2.95[a]	2	0.19	2.34	2	0.02	< 1
B - Sex	1	0.26	3.07[a]	1	0.71	< 1	1	0.20	1.92
C - Program Type	2	0.17	2.00	2	0.36	< 1	2	0.13	1.22
Linear	1	0.04	< 1	1	0.01	< 1	1	0.10	< 1
Rest	1	0.30	3.53[a]	1	0.06	< 1	1	0.16	1.50
D in C - Program	3	0.32	3.81*	3	0.13	1.61	3	0.99	9.25**
A B	4	0.13	1.56	4	0.04	< 1	4	0.03	< 1
A C	8	0.07	< 1	8	0.16	1.99[a]	8	0.06	< 1
A D	12	0.21	2.47**	12	0.11	1.34	12	0.13	1.23
B C	2	0.08	< 1	2	0.05	< 1	2	0.06	< 1
B D	3	0.14	1.64	3	0.08	< 1	3	0.02	< 1
A B C	8	0.13	1.52	8	0.03	< 1	8	0.20	1.91[a]
A B D	12	0.10	1.12	12	0.14	1.65[a]	12	0.02	< 1
Within	120	0.08		120	0.08		120	0.11	

(See page III-8)

[a] $p < .10$
* $p < .05$
** $p < .01$

Appendix C-III

ANOVA Tables

Nested Factors ANOVAs for Arcsin Understanding Scores
Secondary Set of Episodes
Grades 3, 6, 9, 12

	Motivations			Immediate Consequences			Final Consequences		
Source	df	MS	F	df	MS	F	df	MS	F
A - Grade	3	3.11	15.56**	3	0.50	2.21[a]	3	1.25	9.84**
Linear	1	6.87	34.35**	1	1.14	5.02*	1	3.10	24.17**
Quadratic	1	1.19	5.95*	1	0.25	1.08	1	0.23	1.77
Rest	1	1.27	6.36*	1	0.12	< 1	1	0.42	3.28[a]
B - Sex	1	0.54	2.70	1	0.69	3.04[a]	1	0.08	< 1
C - Program Type	2	0.16	< 1	2	2.03	8.91**	2	0.64	5.06*
Linear	1	0.25	1.25	1	1.95	8.54**	1	0.96	7.54**
Rest	1	0.07	< 1	1	2.12	9.28**	1	0.33	2.60
D in C - Program	3	0.85	4.26**	3	1.62	7.11**	3	0.60	4.71**
A B	3	0.31	1.55	3	0.17	< 1	3	0.14	1.08
A C	6	0.11	< 1	6	0.14	< 1	6	0.07	< 1
A D	9	0.36	1.80[a]	9	0.14	< 1	9	0.32	2.53*
B C	2	0.09	< 1	2	0.19	< 1	2	0.11	< 1
B D	3	0.03	< 1	3	0.24	1.04	3	0.02	< 1
A B C	6	0.28	1.40	6	0.12	< 1	6	0.34	2.69*
A B D	9	0.40	2.00[a]	9	0.13	< 1	9	0.16	1.23
Within	96	0.20		96	0.23		96	0.13	

(See page III-10)

[a] $p < .10$

* $p < .05$

** $p < .01$

Appendix C-III

ANOVA Tables

Arcsin Understanding Scores for All Ss by Program Type
Primary Set of Episodes
Grades K, 3, 6, 9, 12

	Motivations			Immediate Consequences			Final Consequences		
Source	df	MS	F	df	MS	F	df	MS	F
A - Sex	1	0.00	< 1	1	0.04	< 1	1	0.31	2.94[a]
B - Grade	4	6.71	64.93**	4	3.65	37.85**	4	4.18	39.32**
C - Program Type	2	0.39	3.73*	2	0.10	< 1	2	0.48	4.51
A B	4	0.09	< 1	4	0.02	< 1	4	0.11	1.00
A C	2	0.23	2.24	2	0.07	< 1	2	0.09	< 1
B C	8	0.12	1.20	8	0.13	1.35	8	0.13	1.21
A B C	8	0.09	< 1	8	0.07	< 1	8	0.15	1.45
Within	241	0.10		241	0.10		241	0.11	

(See page III-10)

Arcsin Understanding Scores for All Ss by Specific Program
Primary Set of Episodes
Grades K, 3, 6, 9, 12

	Motivations			Immediate Consequences			Final Consequences		
Source	df	MS	F	df	MS	F	df	MS	F
A - Sex	1	0.00	< 1	1	0.04	< 1	1	0.31	3.55[a]
B - Grade	4	6.71	75.26**	4	3.65	38.05**	4	4.18	47.41**
C - Program	5	0.49	5.50**	5	0.12	1.22	5	1.02	11.55**
A B	4	0.09	1.05	4	0.02	< 1	4	0.11	1.20
A C	5	0.37	4.15**	5	0.04	< 1	5	0.07	< 1
B C	20	0.16	1.77*	20	0.11	1.10	20	0.17	1.90*
A B C	20	0.12	1.37	20	0.10	1.06	20	0.10	1.08
Within	211	0.09		211	0.10		211		

(See page III-11)

[a] $p < .10$

* $p < .05$

** $p < .01$

Appendix C-III

ANOVA Tables

Physical Aggression Score after Television Viewing

	(1) Depicted Violence			(2) Depicted Motivations			(3) Depicted Consequences		
Source	df	MS	F	df	MS	F	df	MS	F
A - Sex	1	16.27	32.77**	1	16.27	32.59**	1	16.27	32.47**
B - Grade	4	5.34	10.76**	4	5.34	10.70**	4	5.34	10.66**
C - (1) Violence	2	2.29	4.61*						
(2) Motivations				3	2.79	5.58**			
(3) Consequences							2	1.04	2.08
A B	4	0.50	< 1	4	0.50	< 1	4	0.50	< 1
A C	2	0.03	< 1	3	0.37	< 1	2	0.63	1.26
B C	8	0.49	< 1	12	0.45	< 1	8	0.51	1.02
A B C	8	0.54	1.08	12	0.34	< 1	8	0.65	1.30
Within	241	0.50		231	0.50		241	0.50	

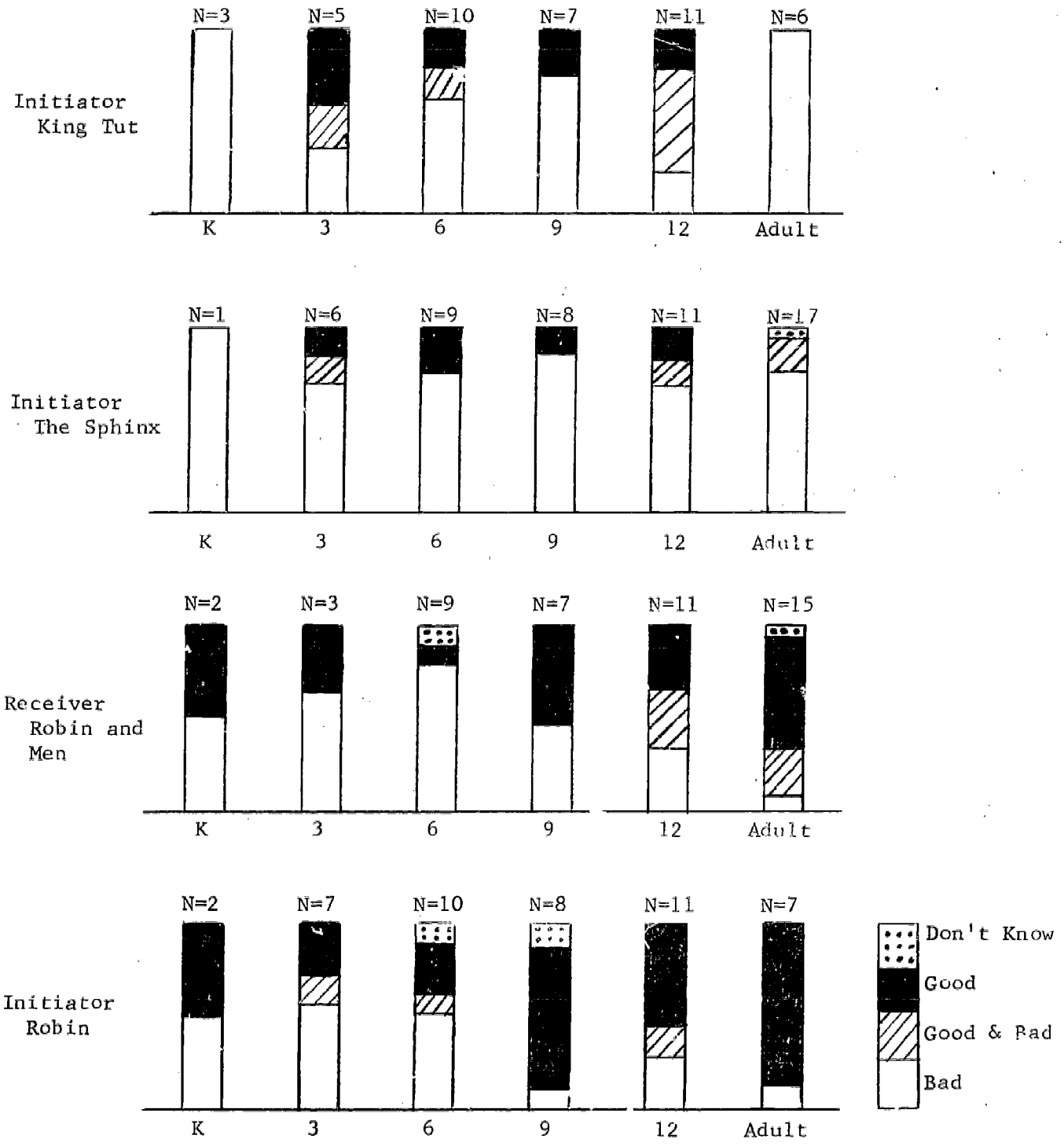
(See page III-41)

* $p < .05$

** $p < .01$

Appendix D-III

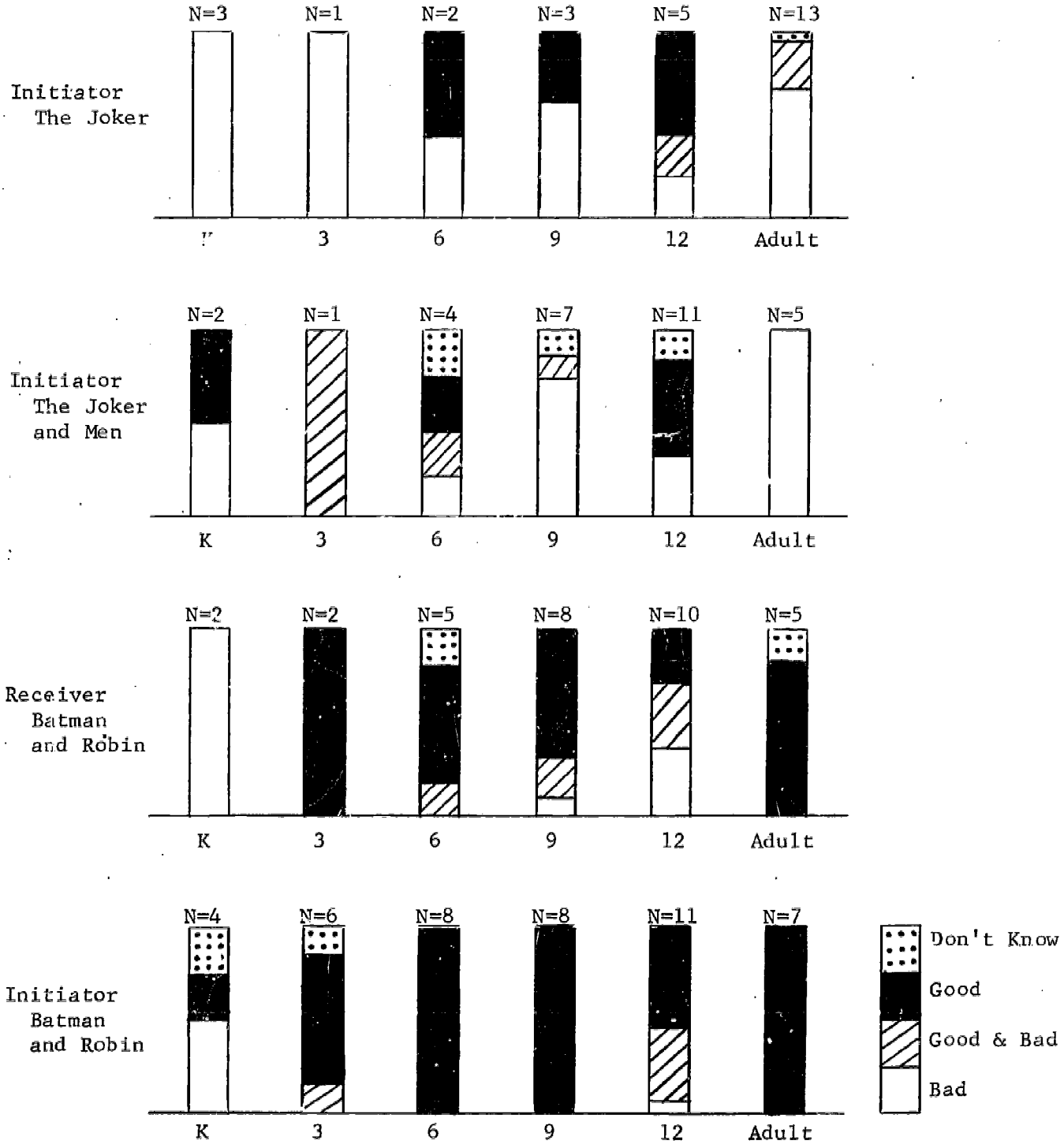
Evaluation of Motivations
Rocket Robin Hood



(see page III-16)

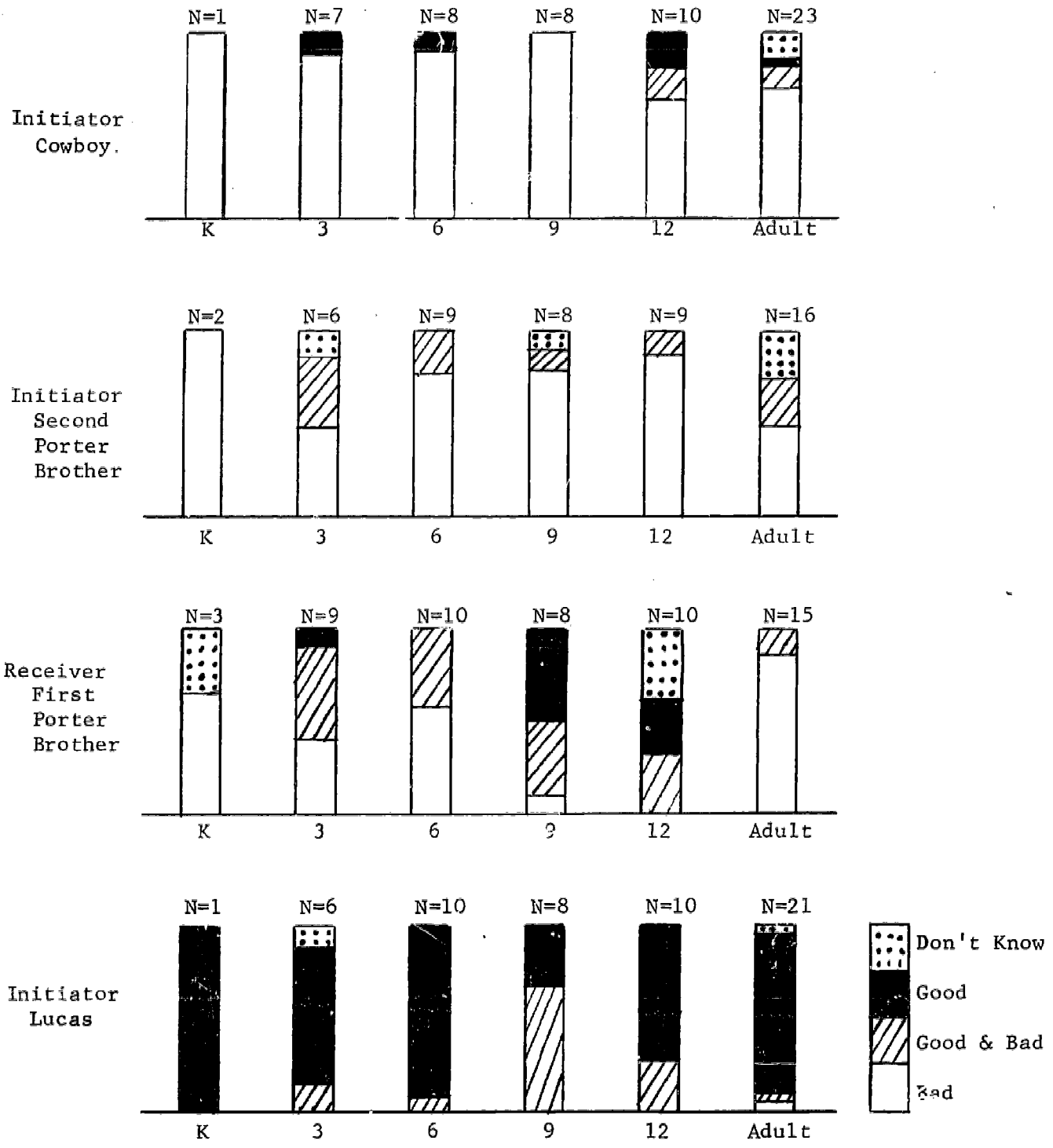
Appendix D-III

Evaluation of Motivations
Batman



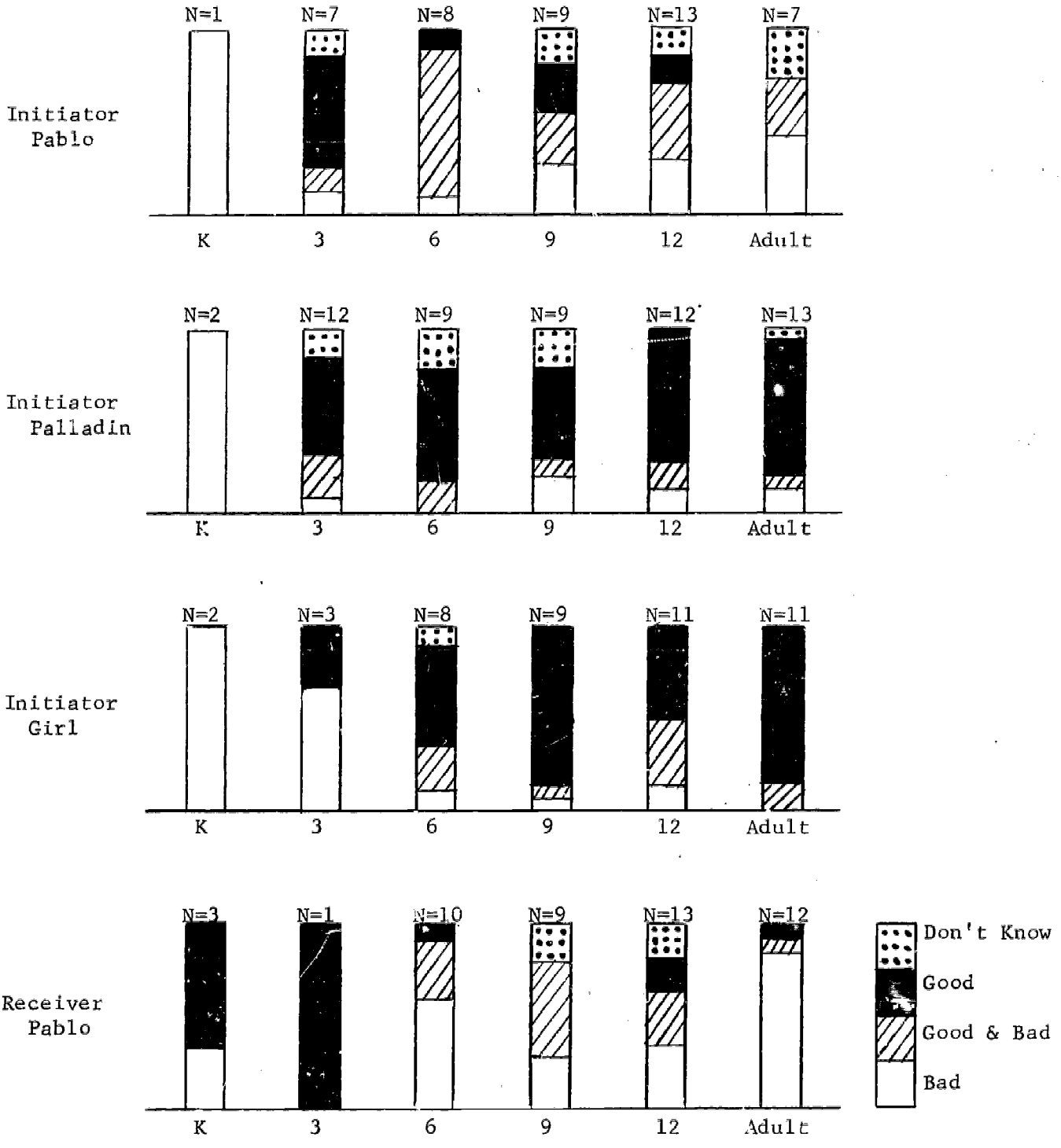
Appendix D-III

Evaluation of Motivations
Rifleman



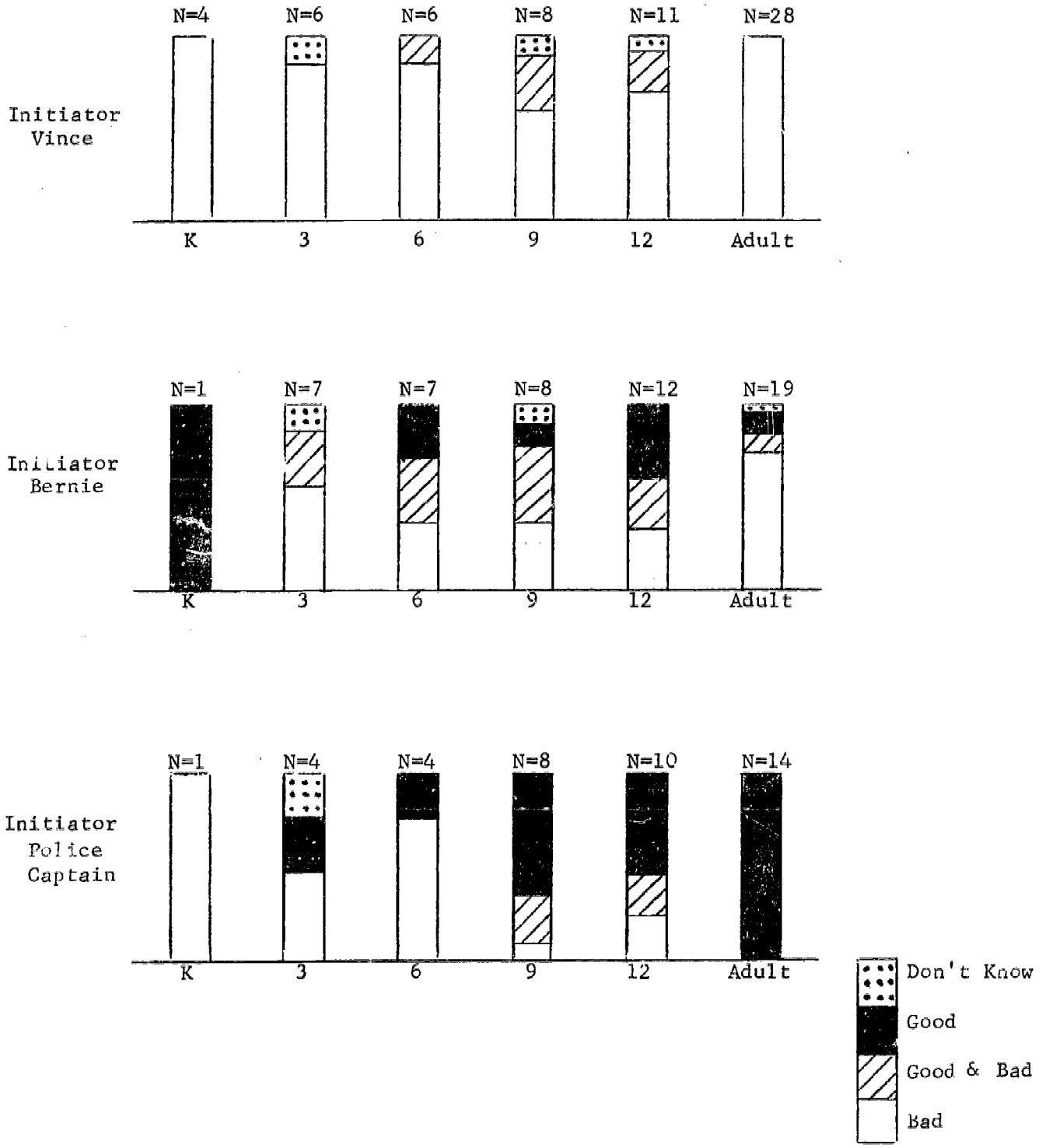
Appendix D-III

Evaluation of Motivations
Have Gun



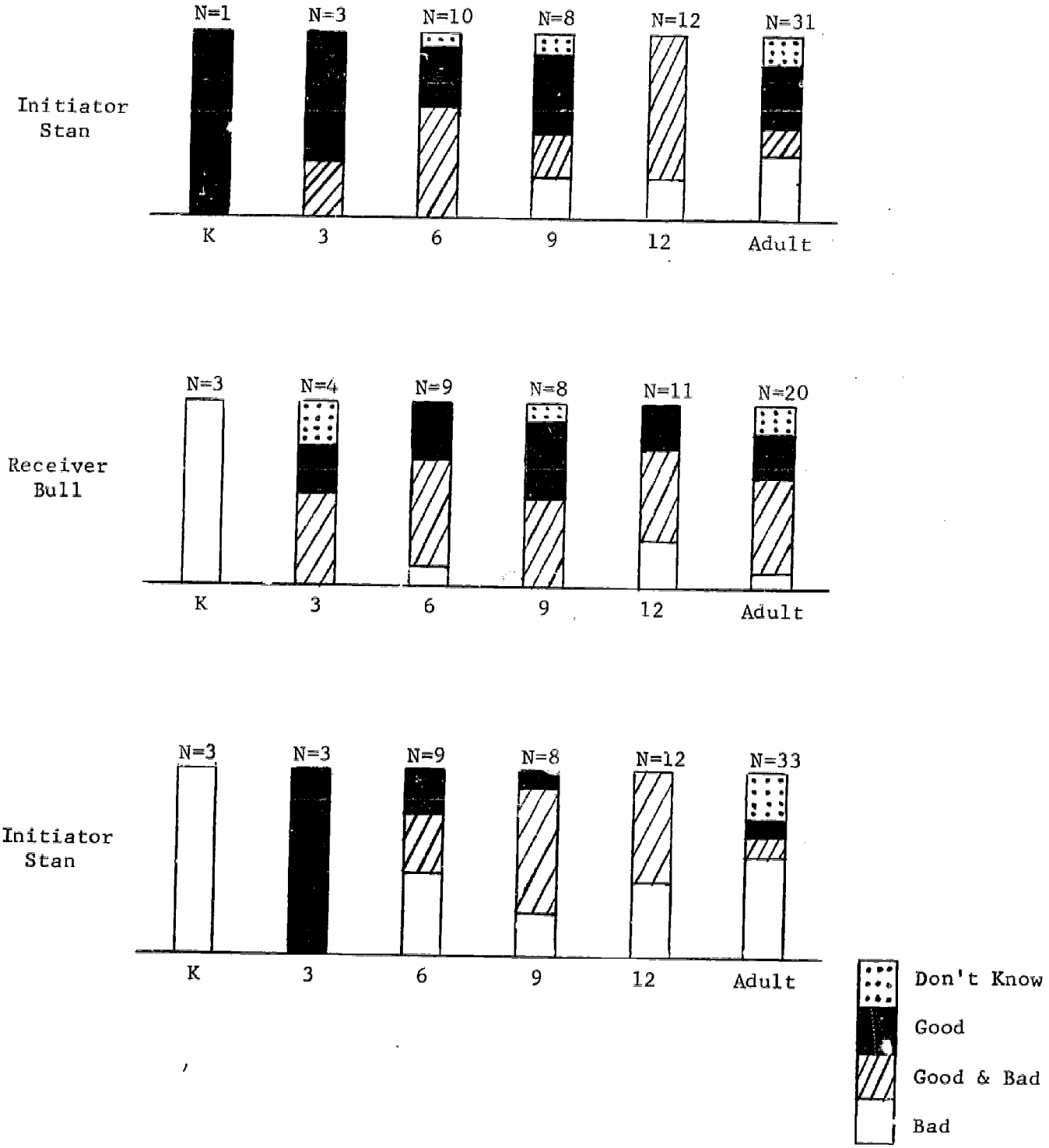
Appendix D-III

Evaluation of Motivations
Adam 12



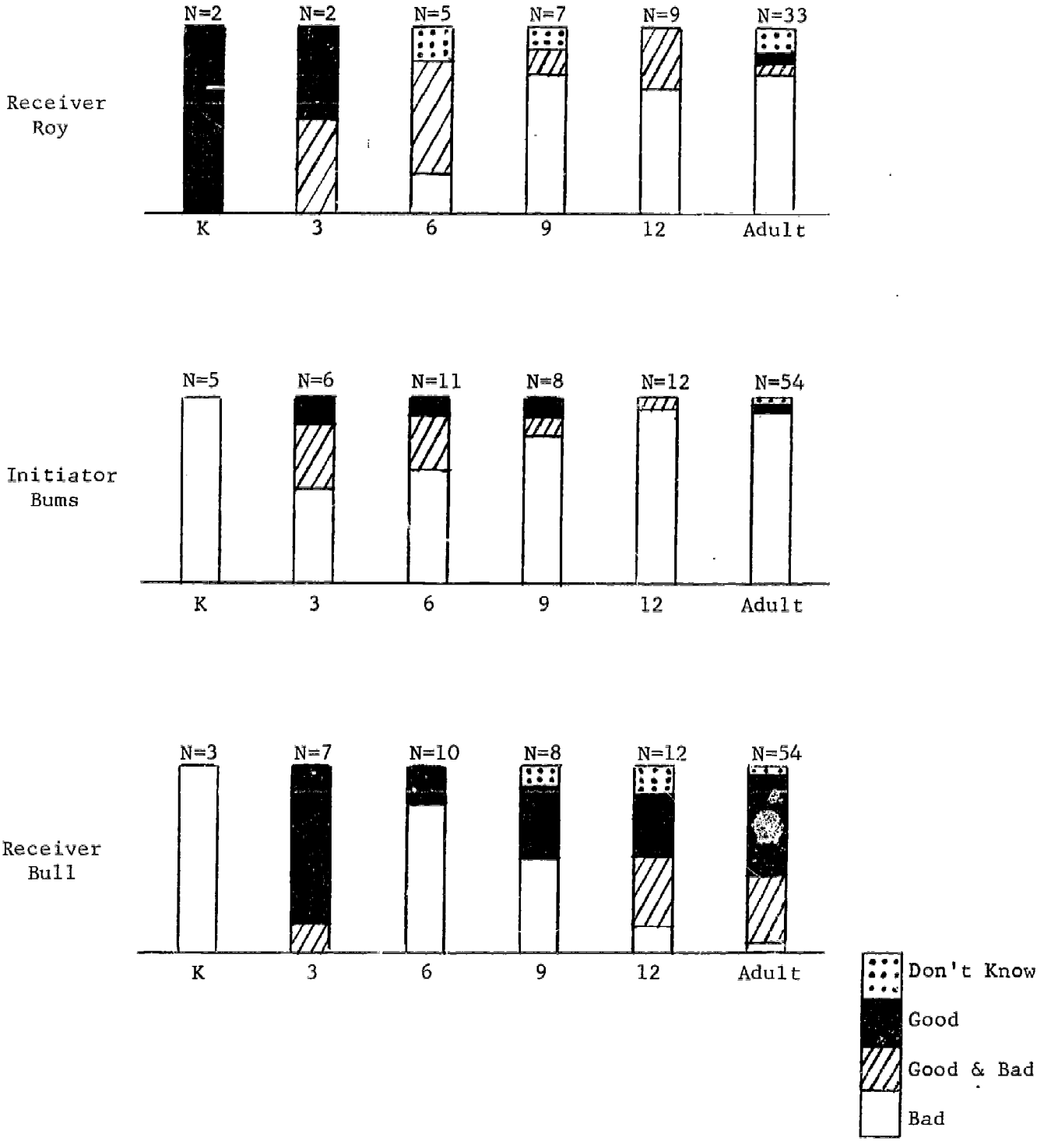
Appendix D-III

Evaluation of Motivations
Felony Squad



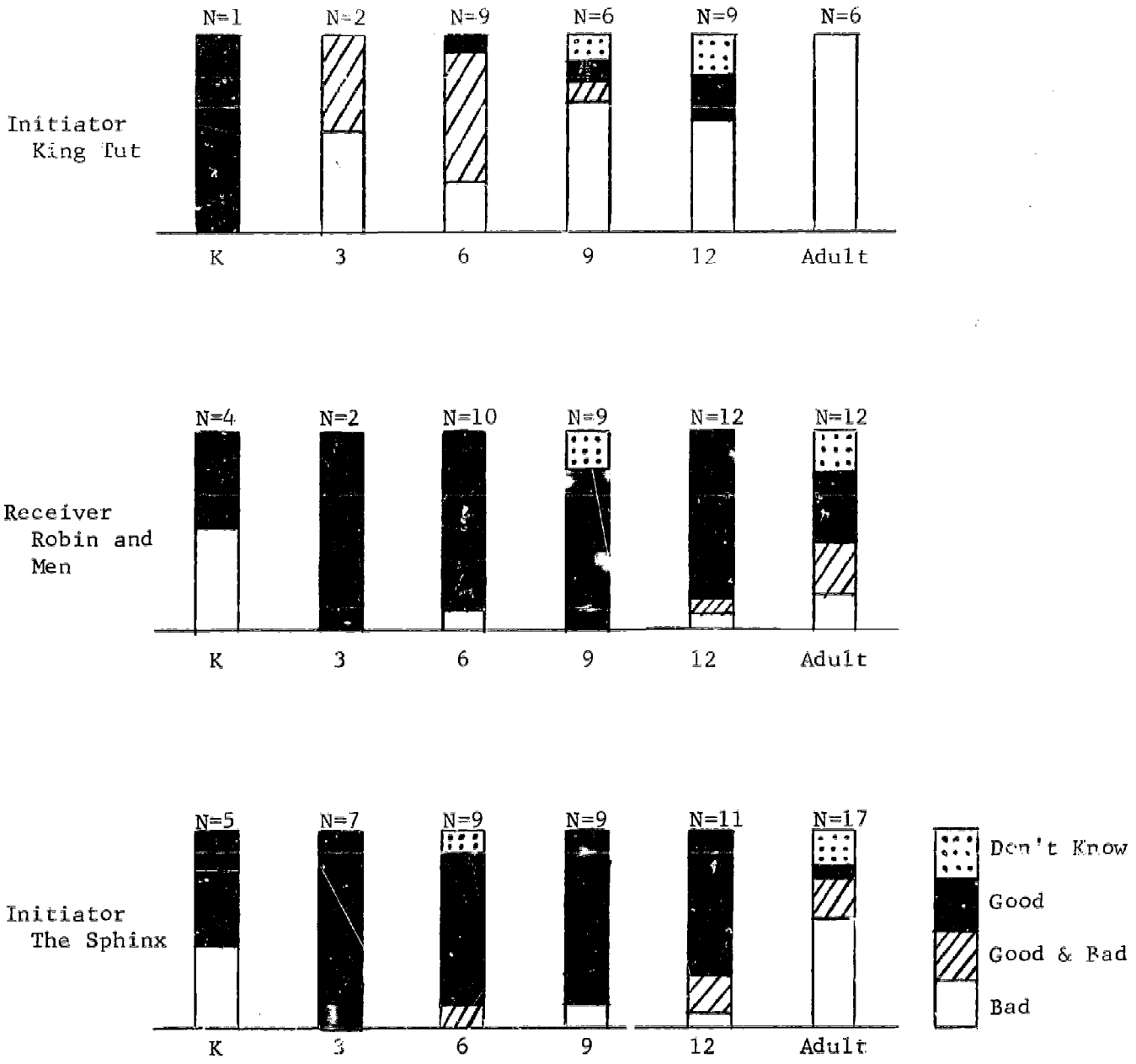
Appendix D-III

Evaluation of Motivations
Felony Squad (cont.)



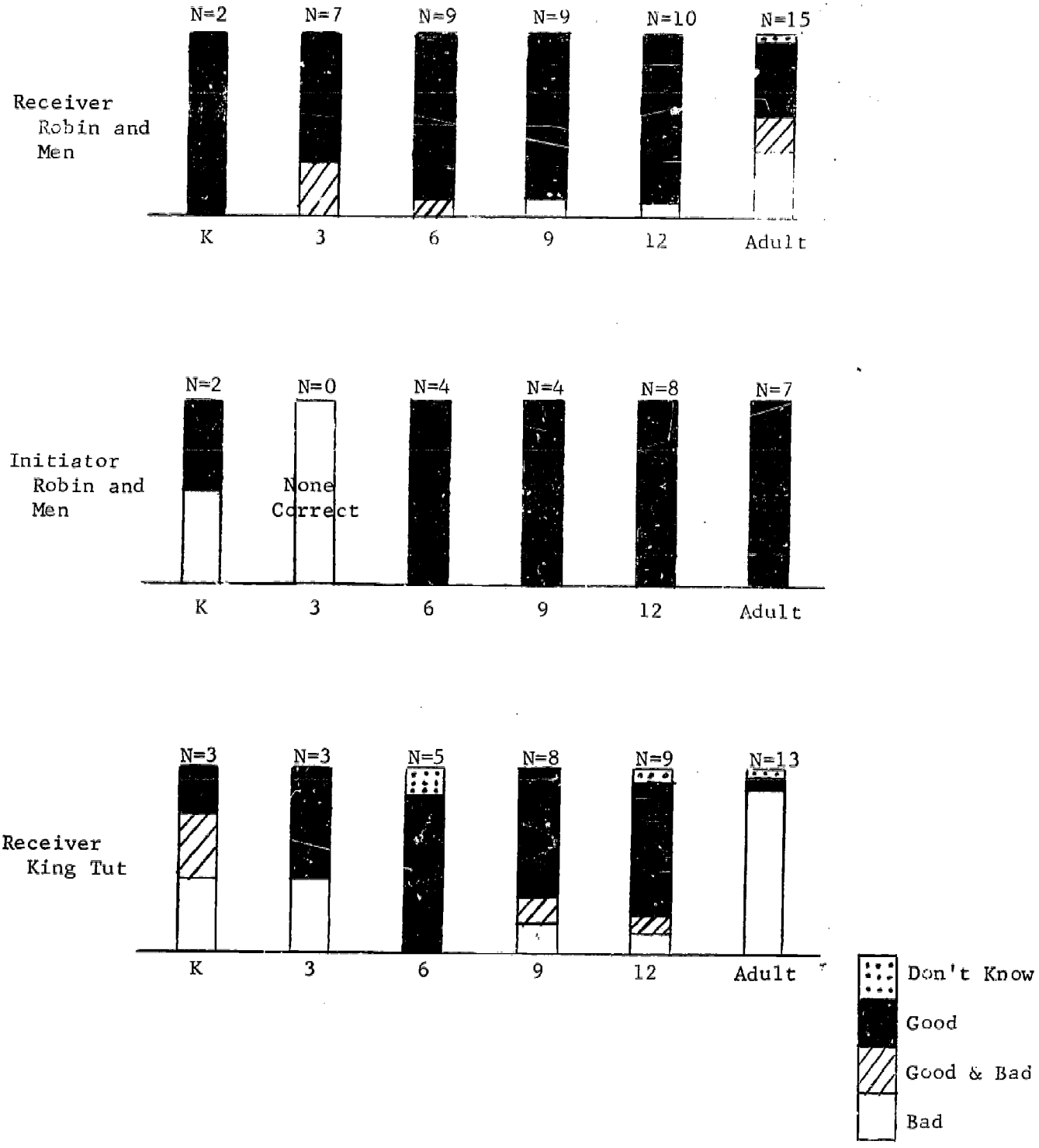
Appendix D-III

Evaluation of Immediate Consequences
Rocket Robin Hood



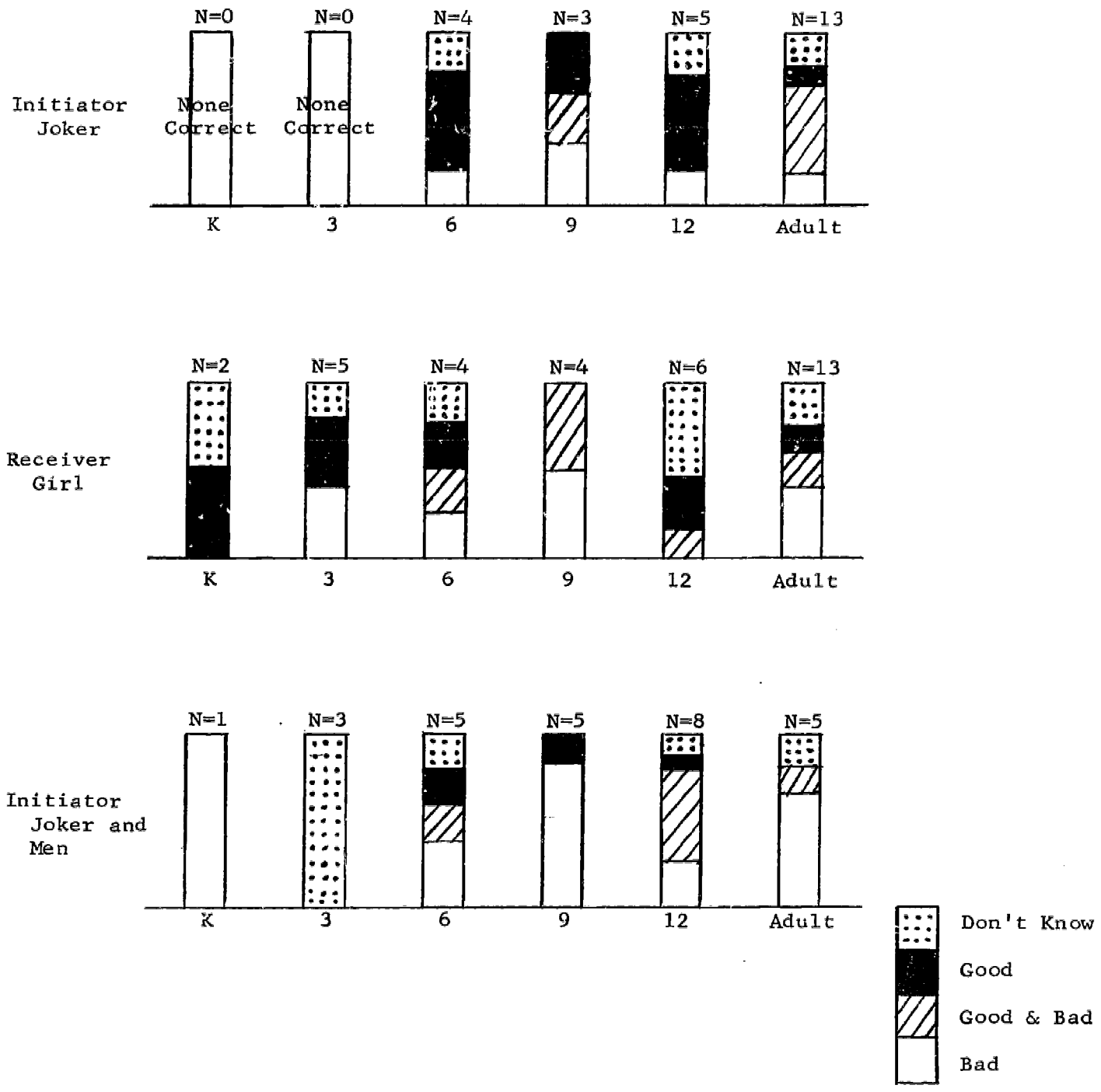
Appendix D-III

Evaluation of Immediate Consequences
Rocket Robin Hood (cont.)



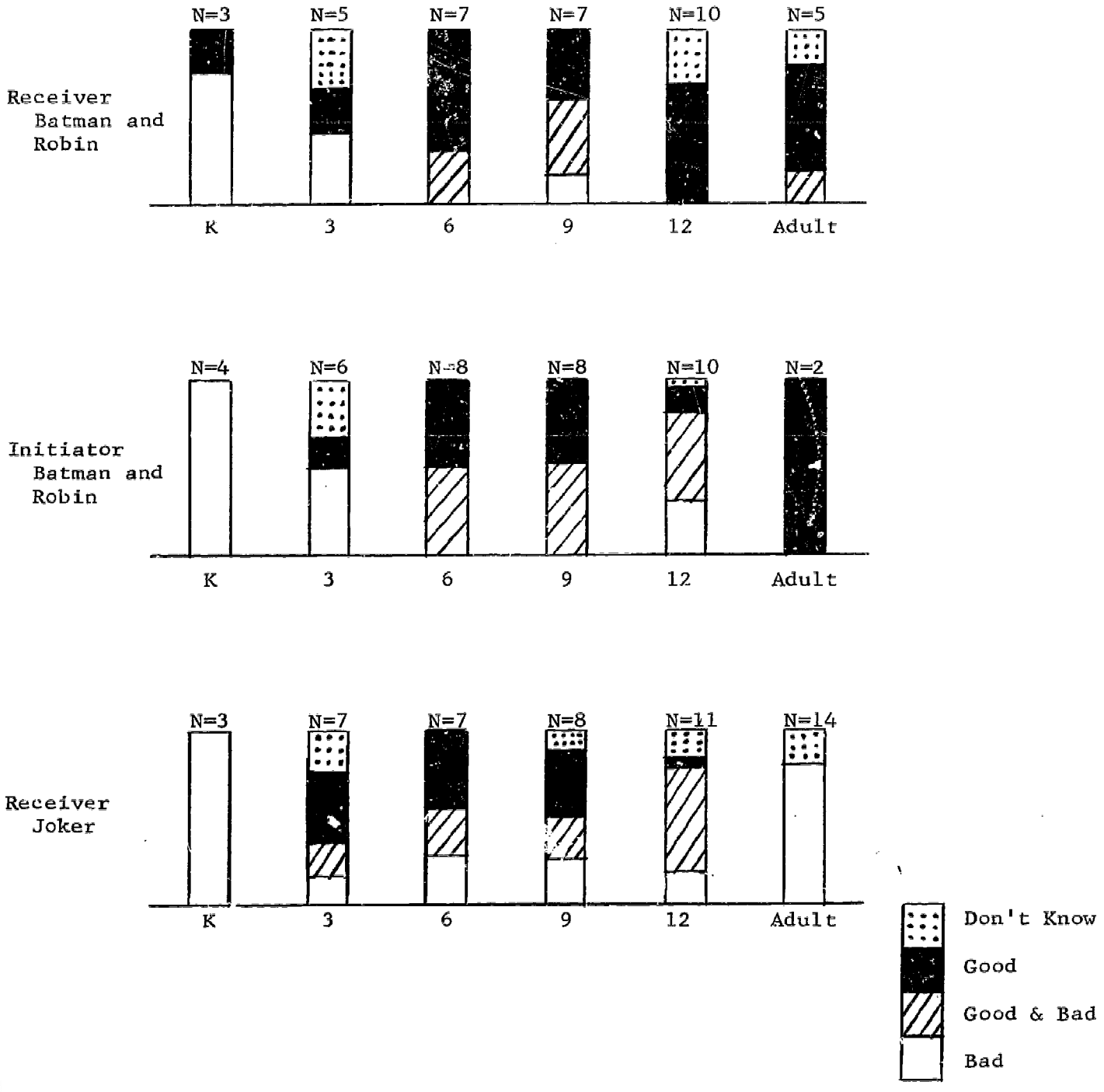
Appendix D-III

Evaluation of Immediate Consequences
Batman



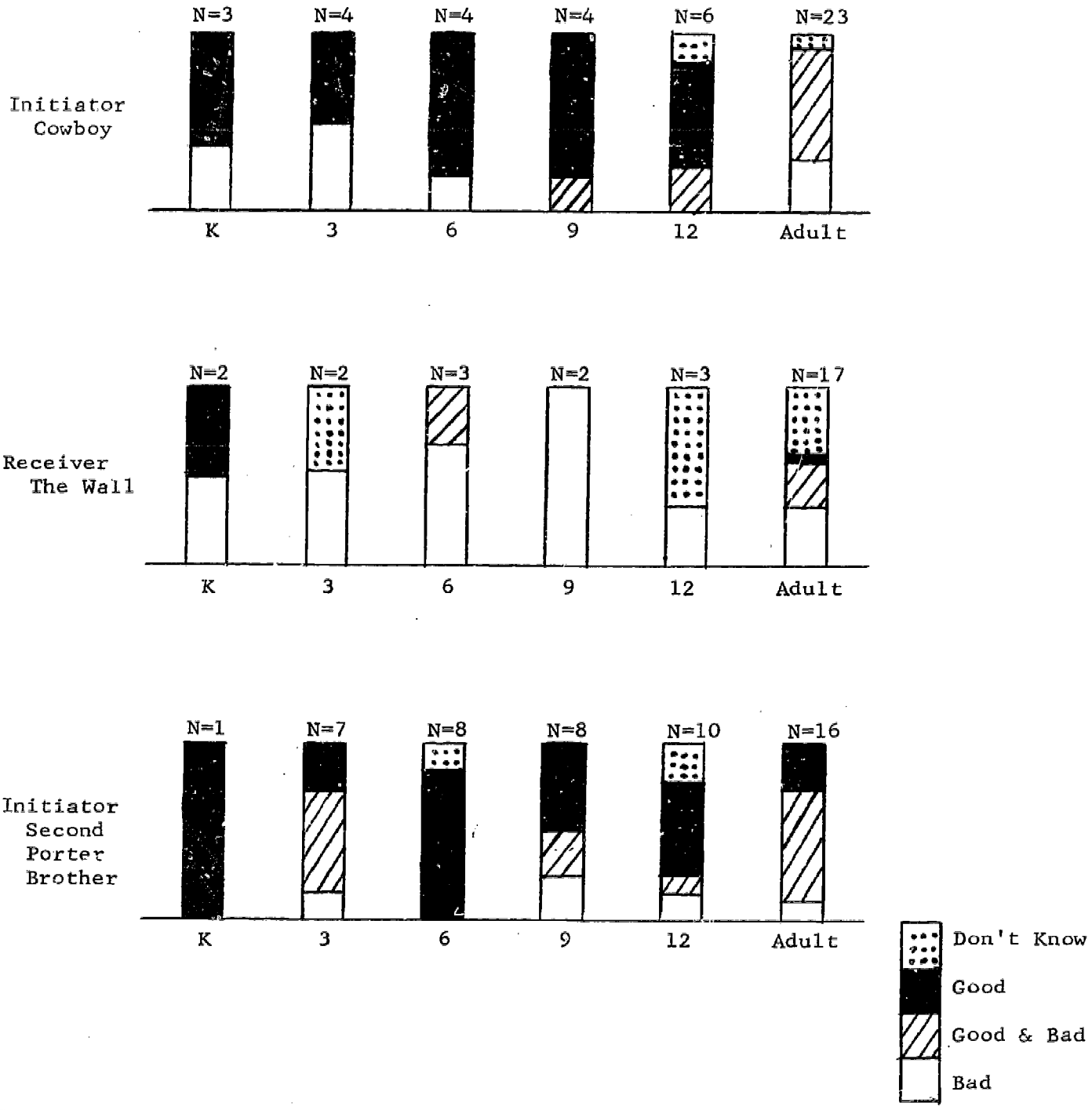
Appendix D-III

Evaluation of Immediate Consequences
Batman (cont.)



Appendix D-III

Evaluation of Immediate Consequences
Rifleman



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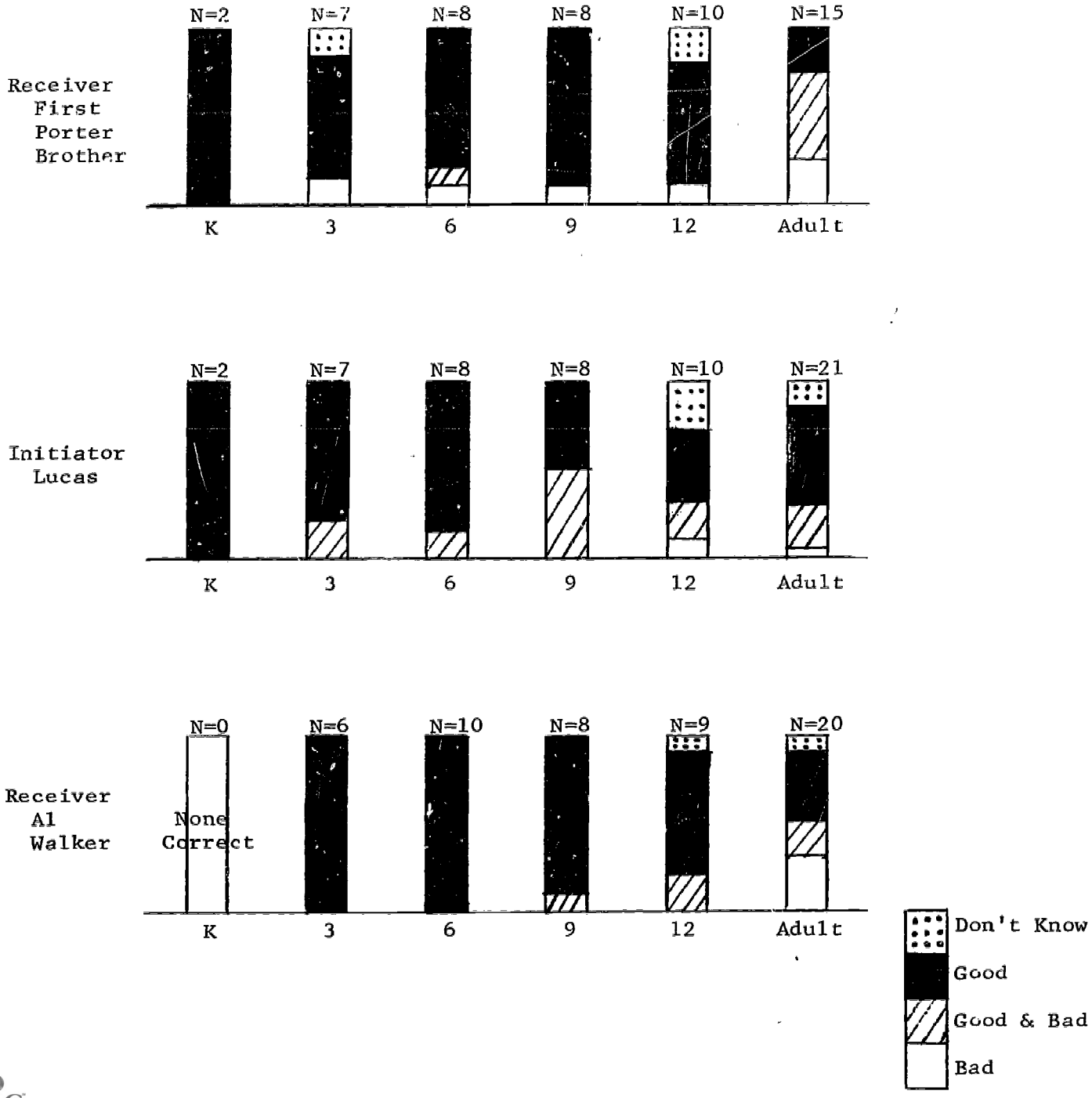
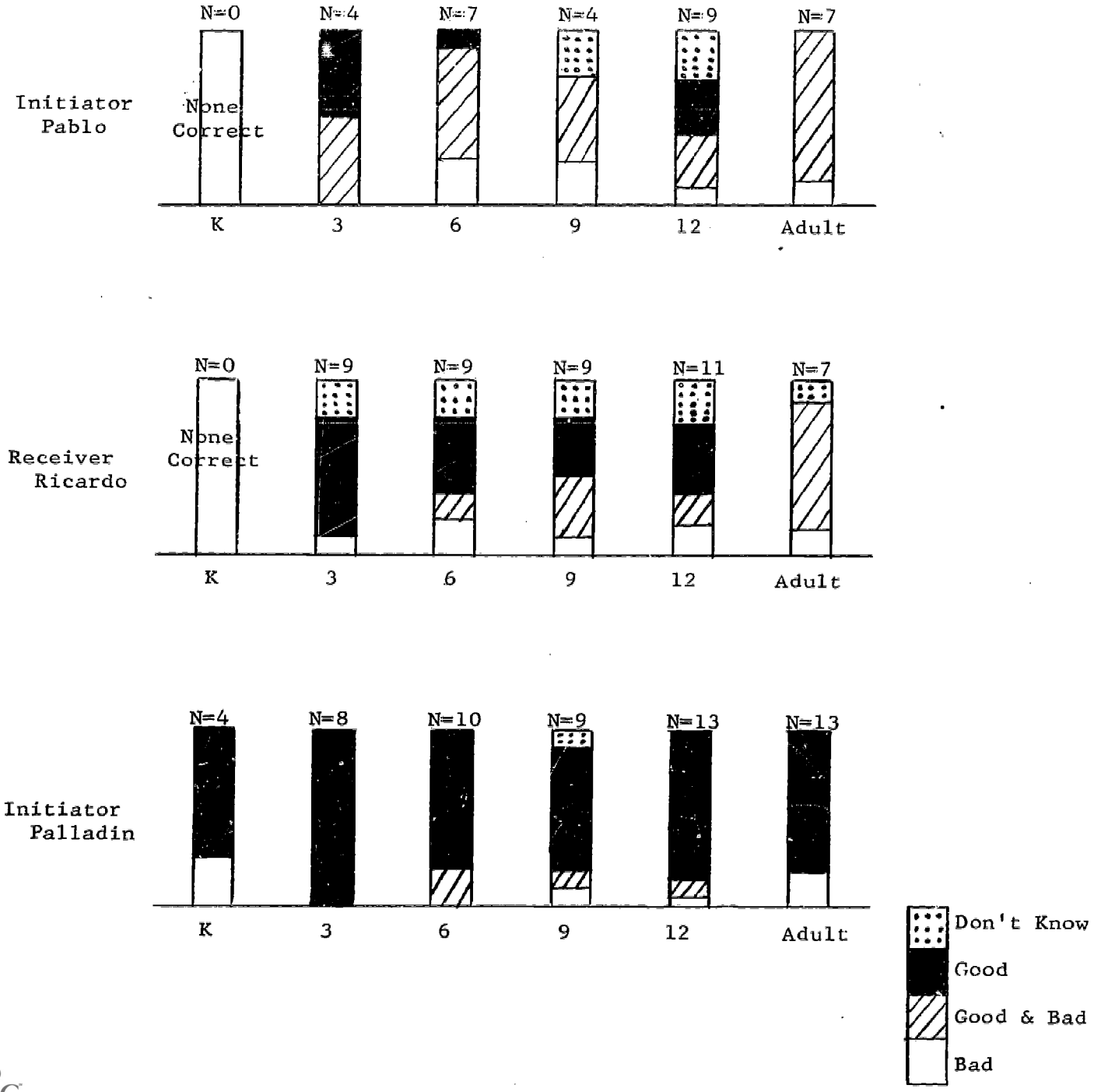
Appendix D-III

Evaluation of Immediate Consequences
Rifleman (cont.)



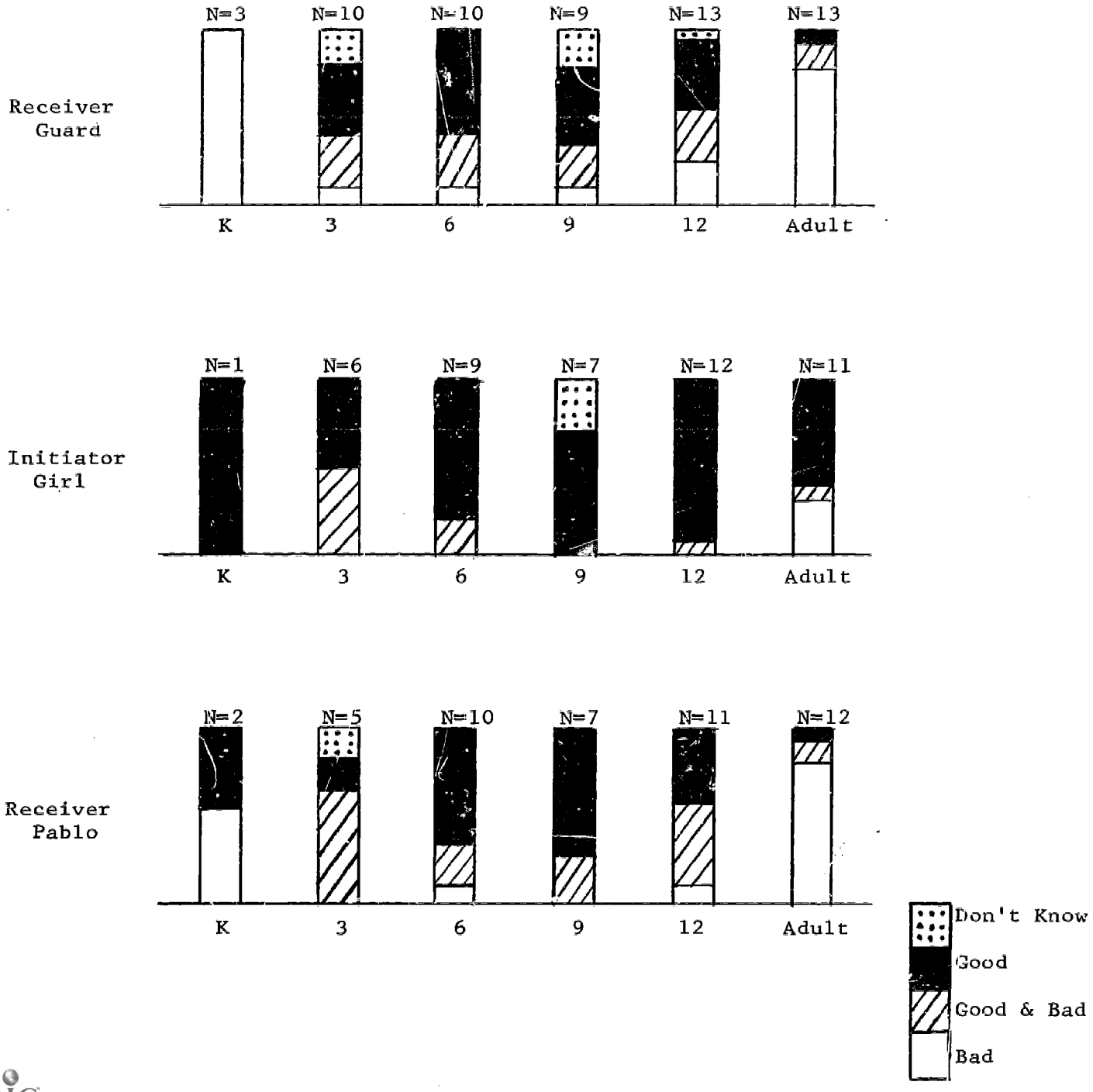
Appendix D-III

Evaluation of Immediate Consequences
Have Gun



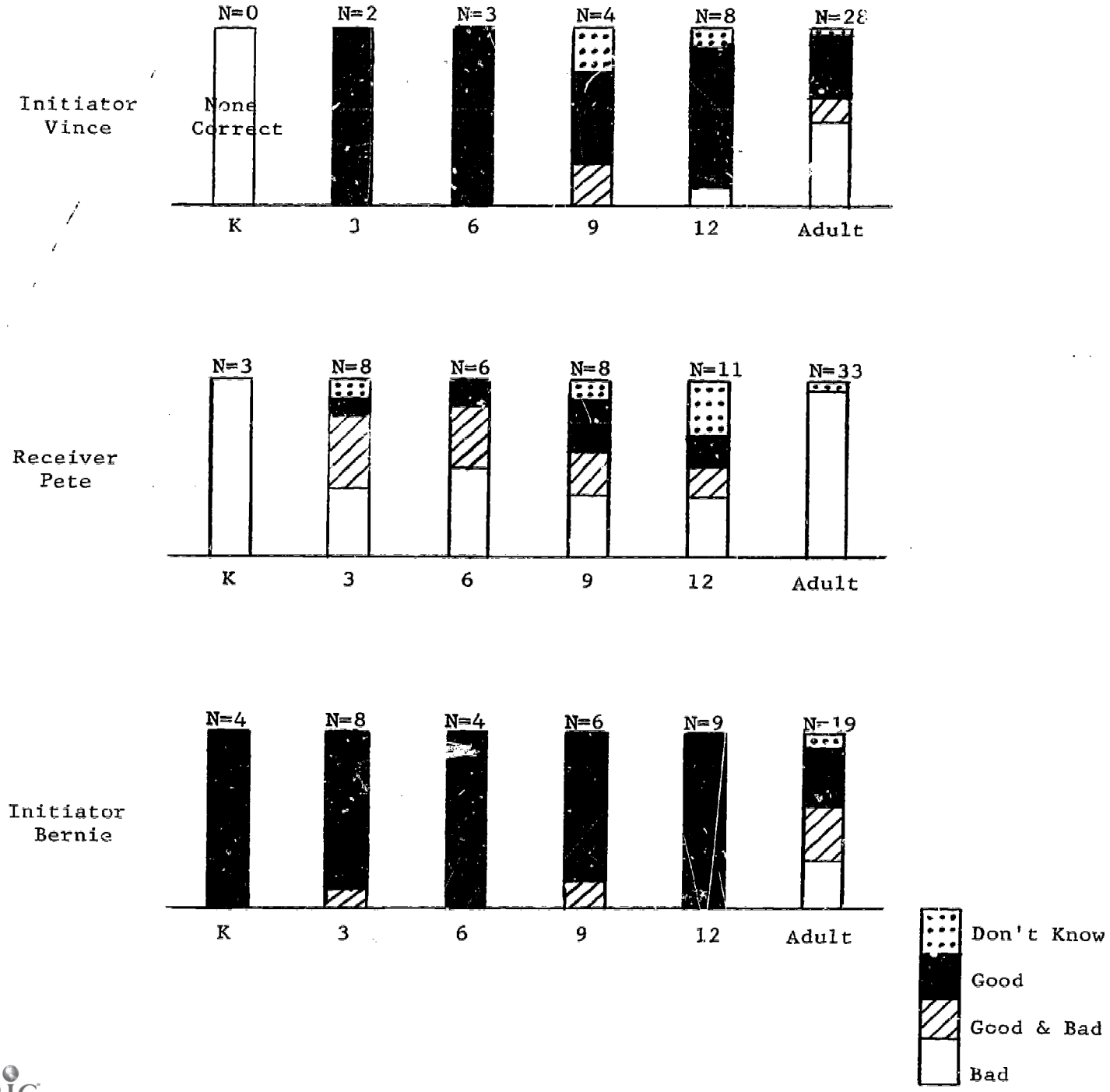
Appendix D-III

Evaluation of Immediate Consequences
Have Gun (cont.)



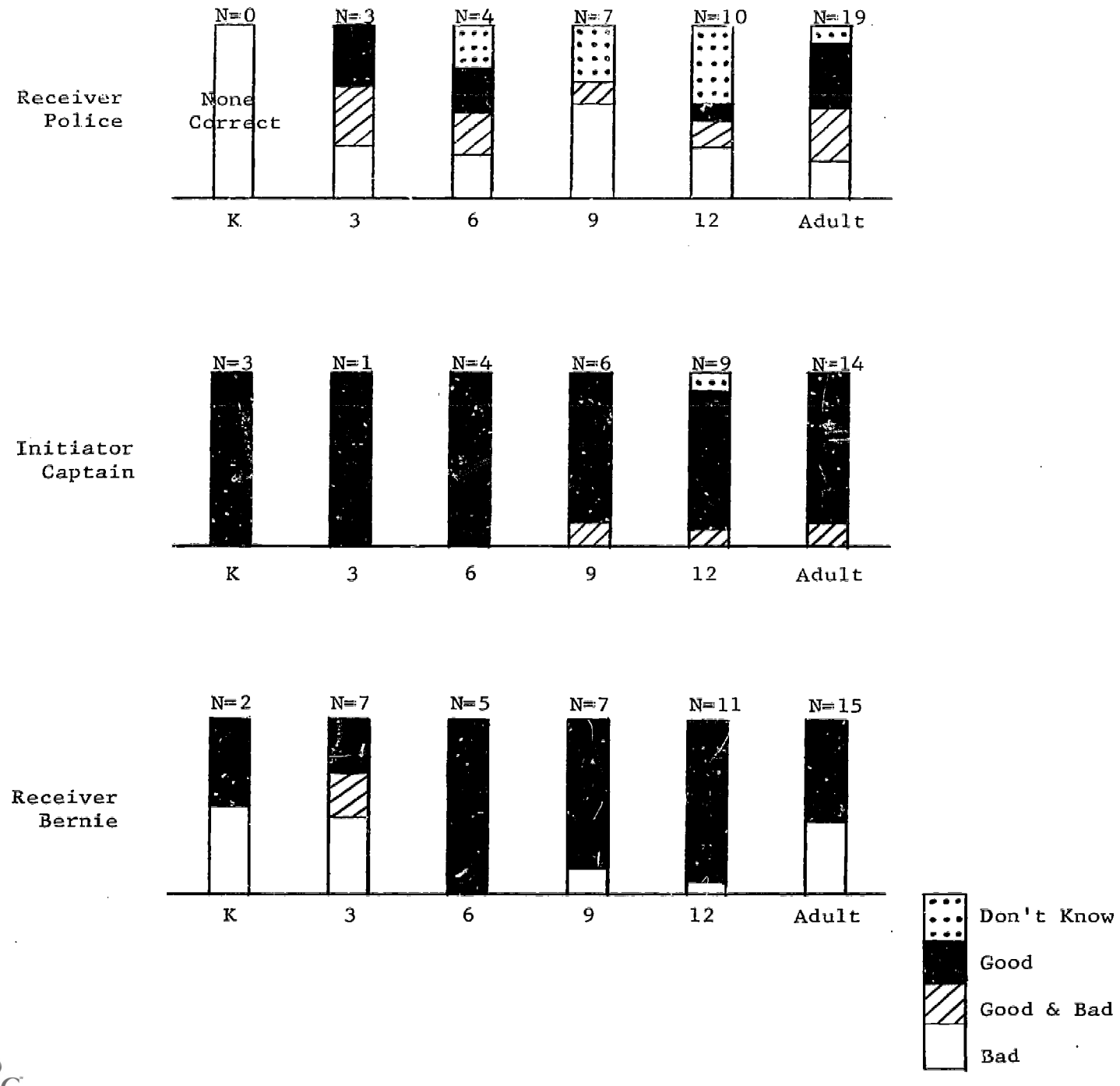
Appendix D-III

Evaluation of Immediate Consequences
Adam 12



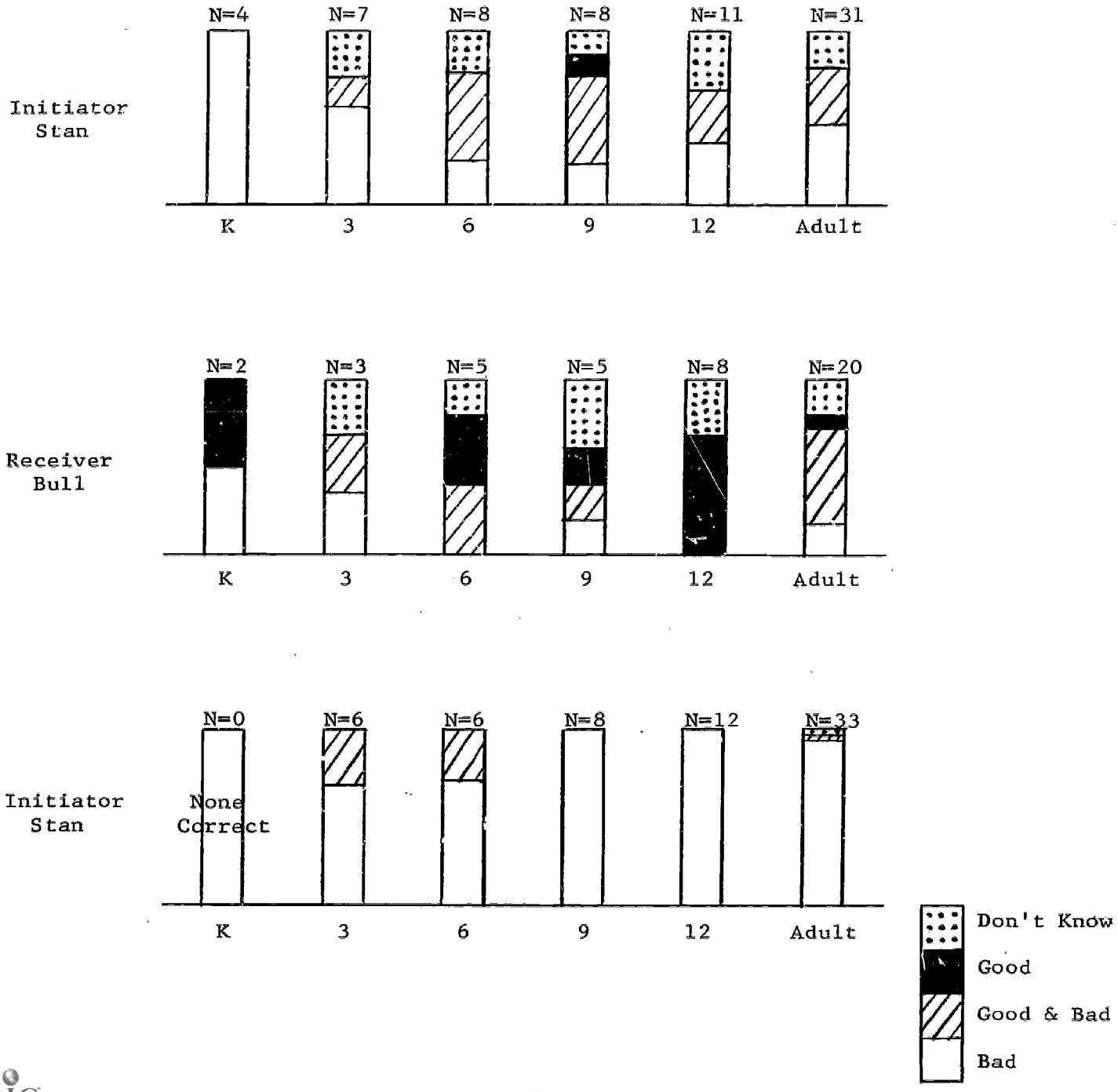
Appendix D-III

Evaluation of Immediate Consequences
Adam 12 (cont.)



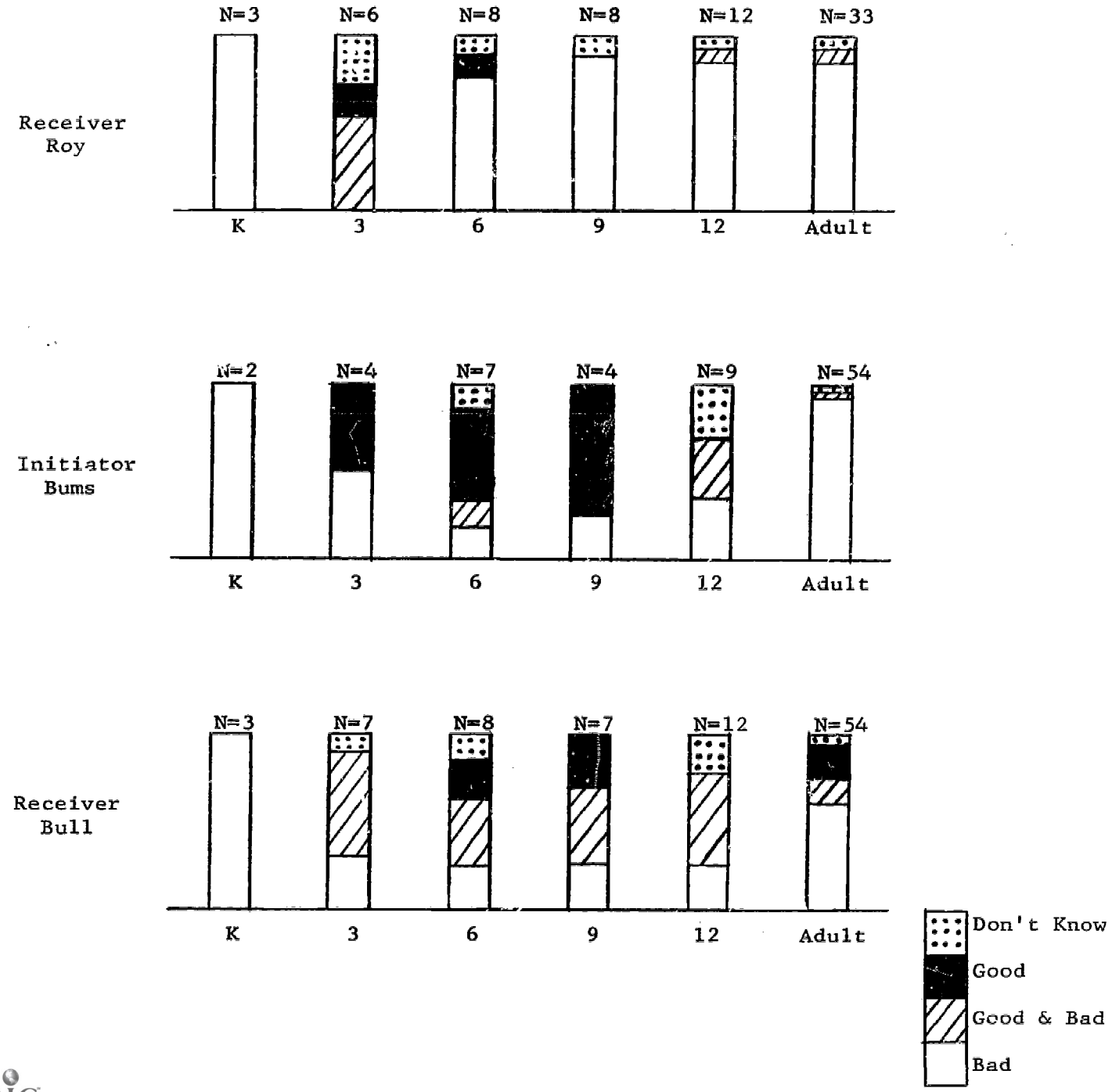
Appendix D-III

Evaluation of Immediate Consequences
Felony Squad



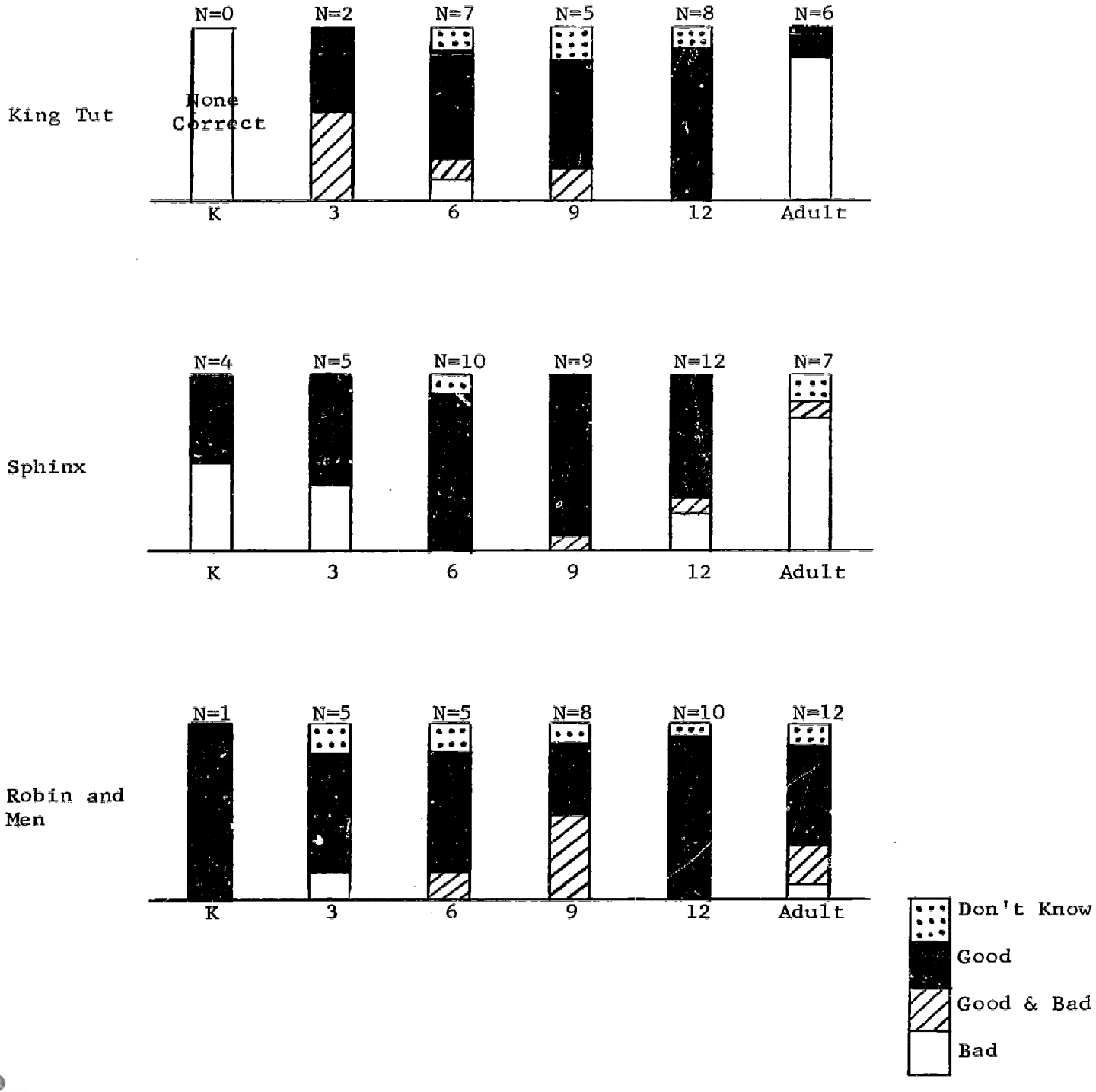
Appendix D-III

Evaluation of Immediate Consequences
Felony Squad (cont.)



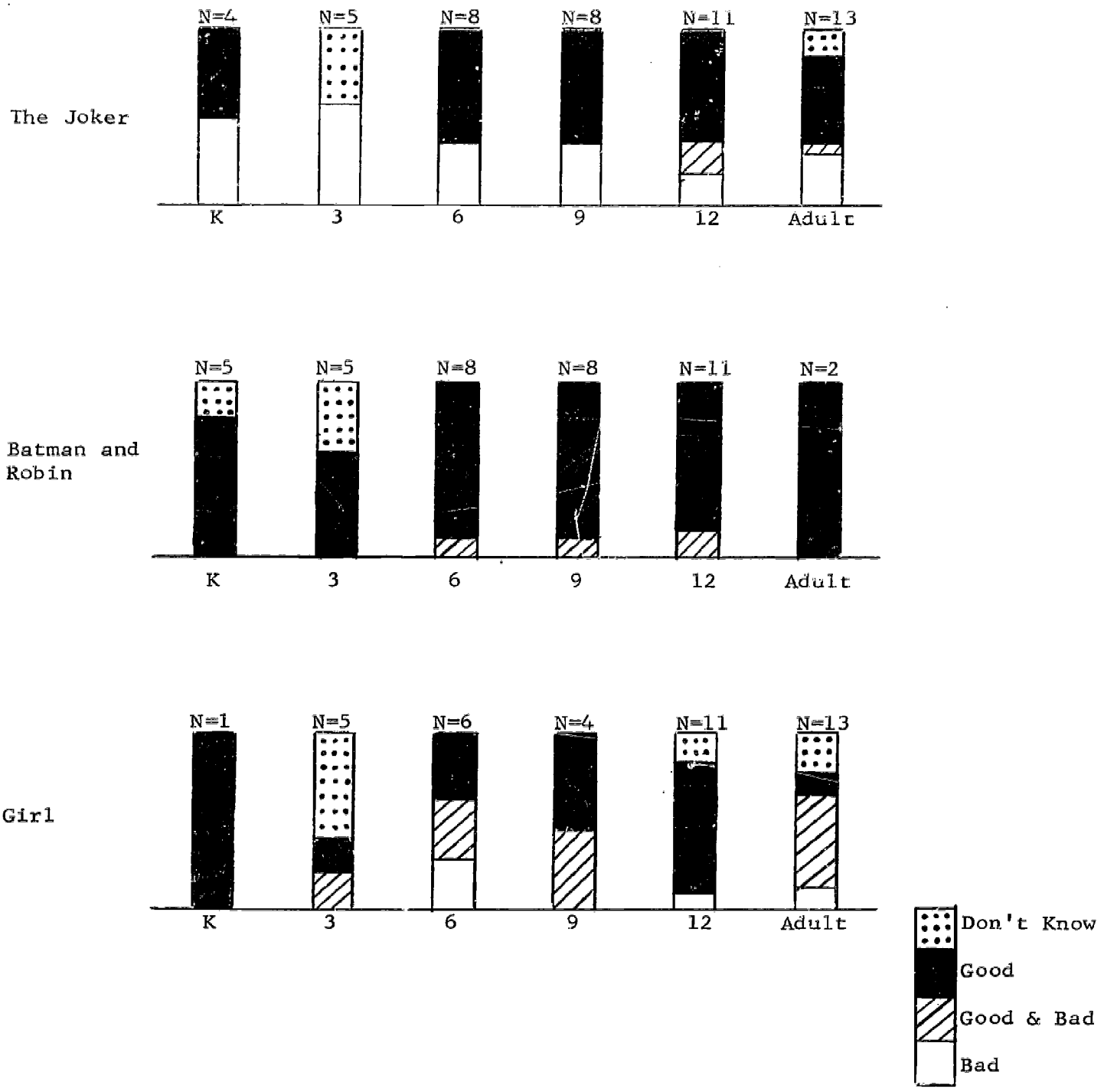
Appendix D-III

Evaluation of Longterm Consequences
Rocket Robin Hood



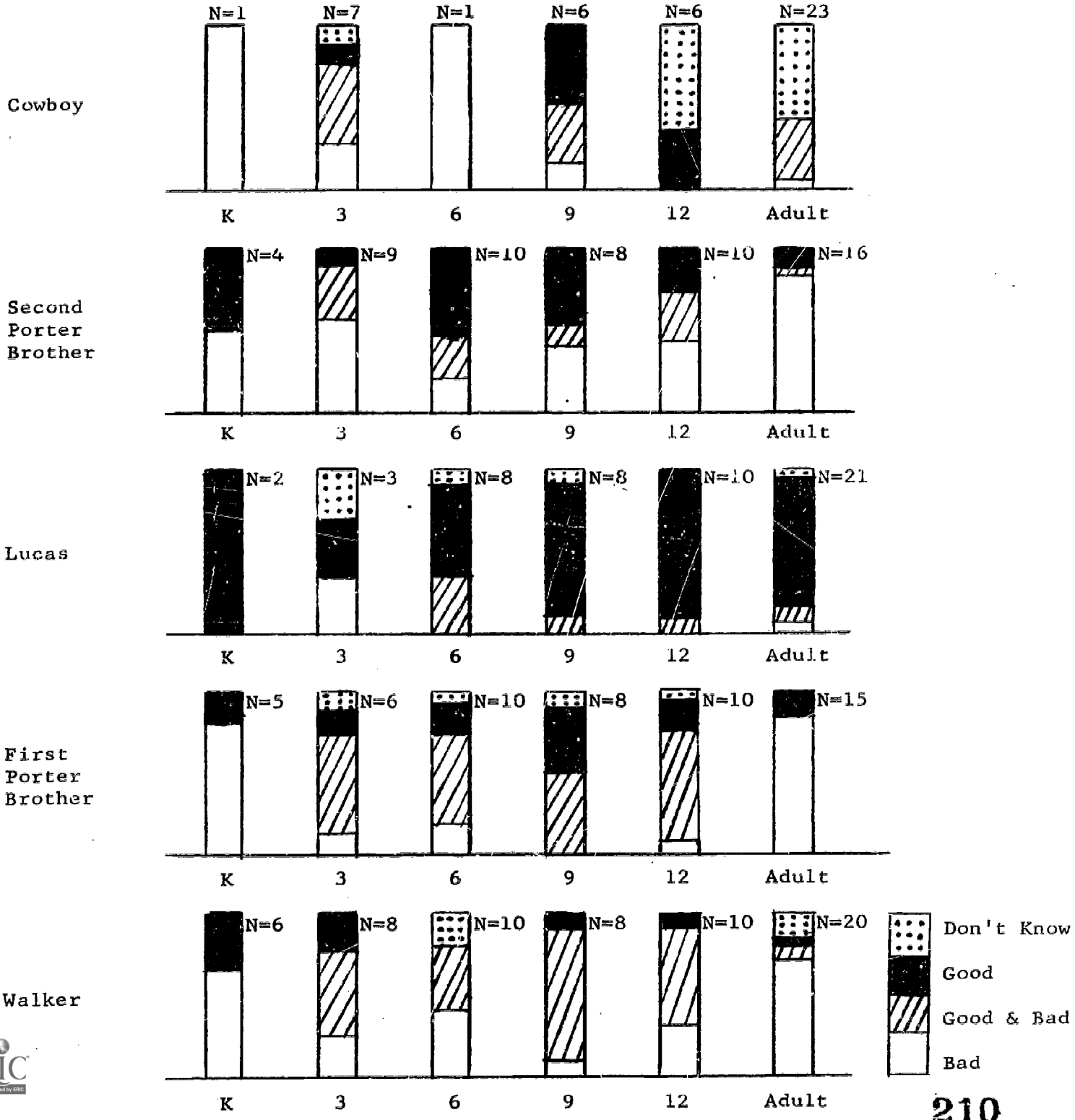
Appendix D-III

Evaluation of Longterm Consequences
Batman



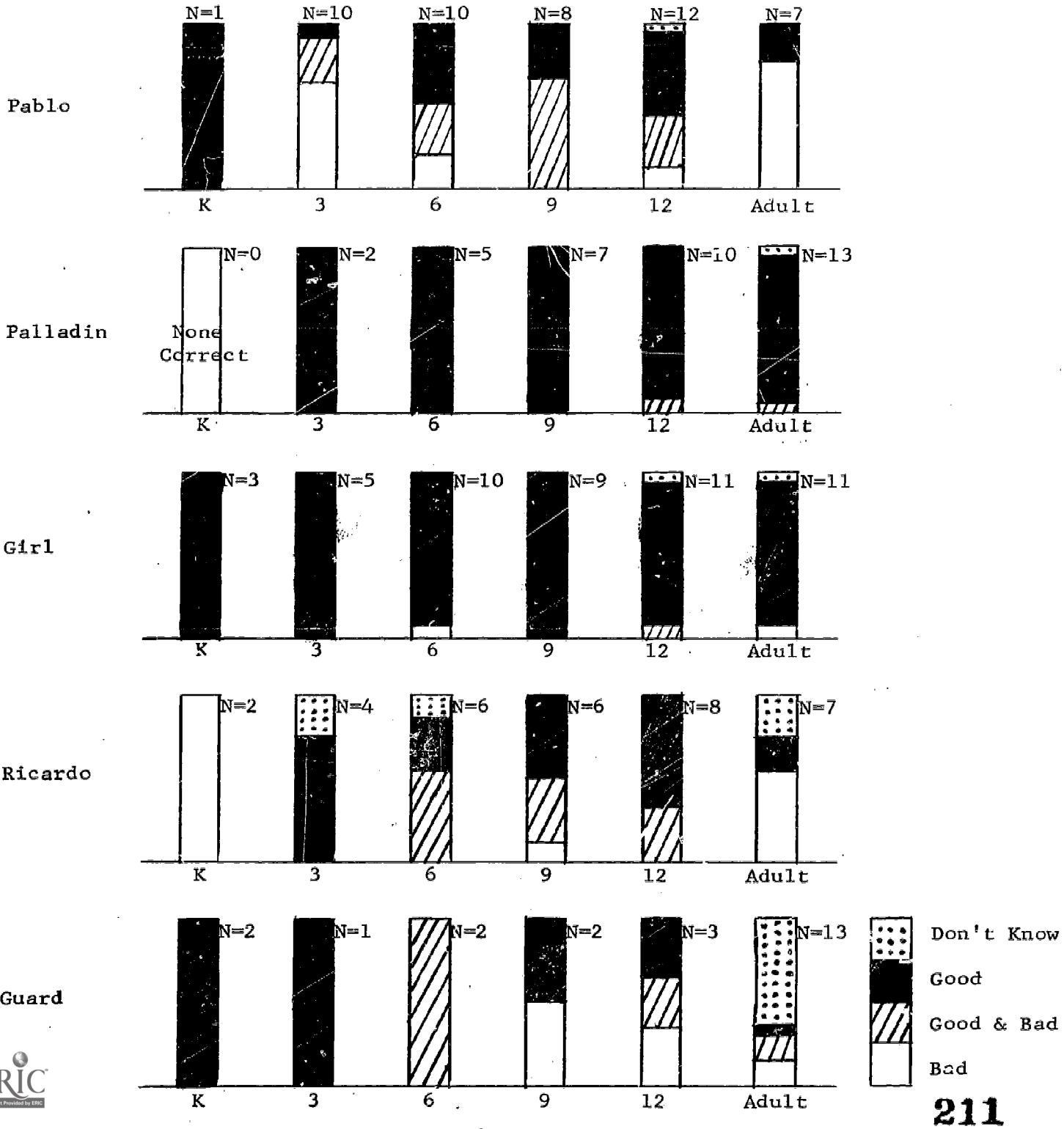
Appendix D-III

Evaluation of Longterm Consequences
Rifleman



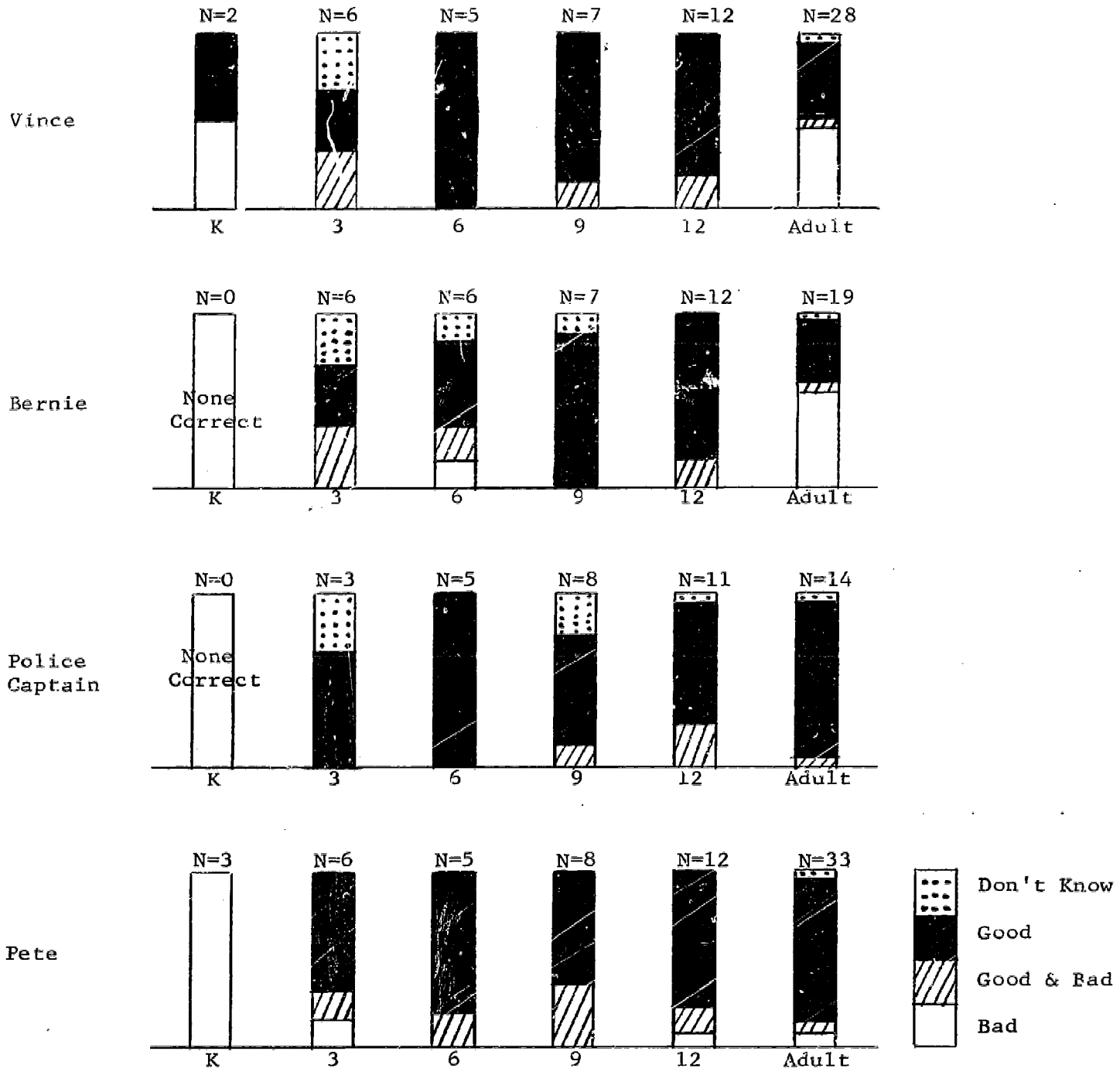
Appendix D-III

Evaluation of Longterm Consequences
Have Gun



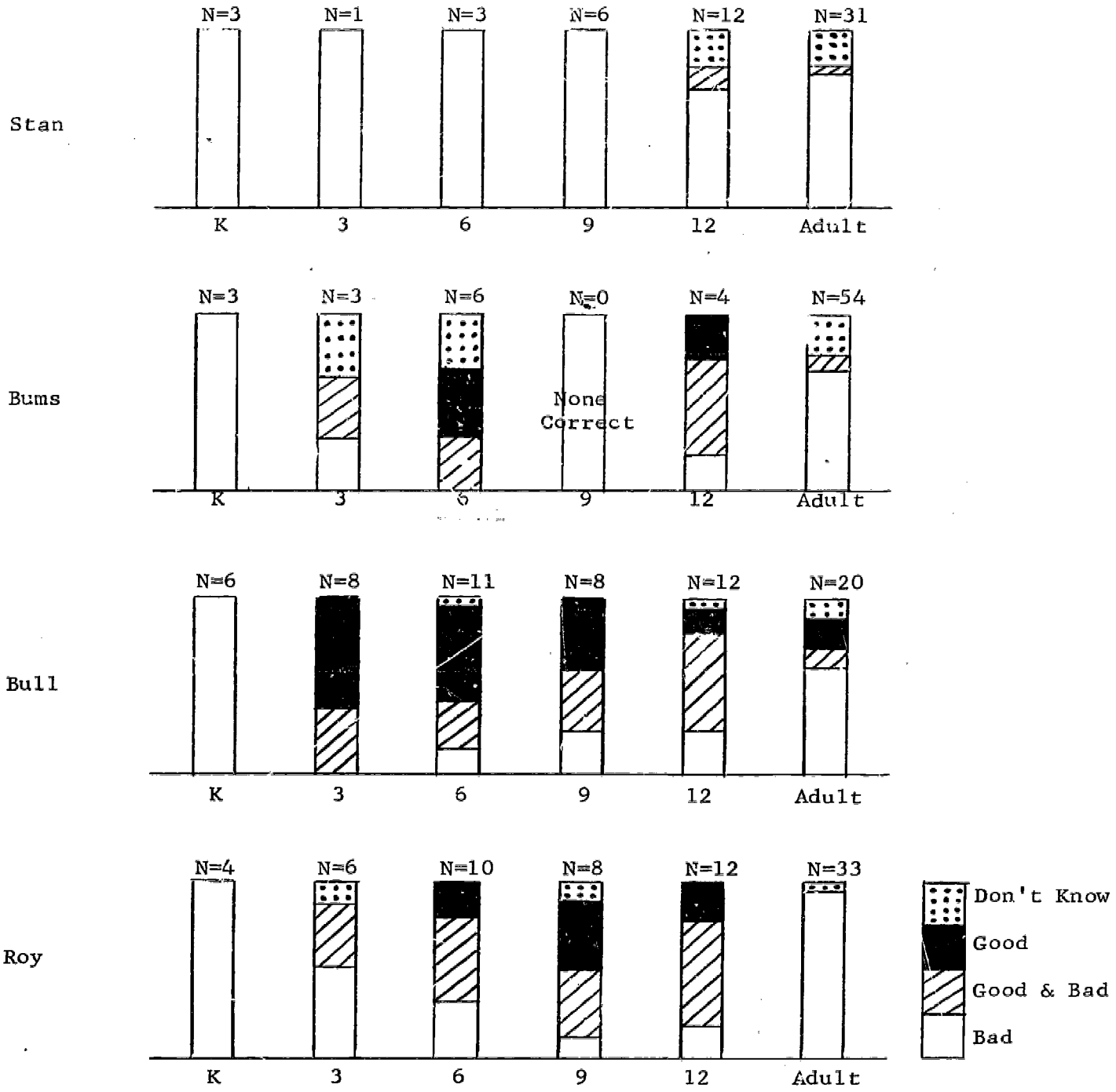
Appendix D-III

Evaluation of Longterm Consequences
Adam 12



Appendix D-III

Evaluation of Longterm Consequences
Felony Squad



Appendix A-IV

ANOVA Tables

Motivations for and Consequences of Aggression and Subsequent Aggression

	Evaluation of Motivations			Evaluation of Consequences		
Source	df	MS	F	df	MS	F
A - Grade	1	28.18	12.08**	1	10.41	4.77*
B - Motivation	1	1.19	< 2	1	0.02	< 2
C - Consequence	1	0.59	< 2	1	1.41	< 2
A B	1	0.70	< 2	1	0.09	< 2
A C	1	2.52	< 2	1	5.70	2.61
B C	1	8.42	3.61[a]	1	3.59	< 2
A B C	1	2.69	< 2	1	0.46	< 2
Within	49	2.33		49	2.18	

(See page IV-7)

(See page IV-7)

	Perceived Amount of Aggression			Physical Aggression Change Score		
Source	df	MS	F	df	MS	F
A - Grade	1	0.61	< 2	1	0.35	< 2
B - Motivation	1	8.76	3.29[a]	1	1.22	4.10*
C - Consequence	1	2.76	< 2	1	0.42	< 2
A B	1	0.74	< 2	1	0.05	< 2
A C	1	0.23	< 2	1	0.02	< 2
B C	1	0.24	< 2	1	0.42	< 2
A B C	1	0.12	< 2	1	0.23	< 2
Within	49	2.66		49	0.30	

(See page IV-11)

(See page IV-13)

[a] $p < .10$

* $p < .05$

** $p < .01$

Appendix A-IV

ANOVA Tables

Motivations for and Consequences of Aggression and Subsequent Aggression

Physical Aggression Change Score

	Preschool and Fifth			Preschool, Fifth, and Twelfth		
Source	df	MS	F	df	MS	F
Regression	8	0.24	0.68	8	0.31	0.91
Sex	1	0.24	< 2	1	0.41	< 2
Grade	1	0.03	< 2	1	0.00	< 2
Depicted Aggression	1	0.02	< 2	1	0.27	< 2
Depicted Motivation	1	0.86	2.46	1	0.53	< 2
Depicted Consequence	1	0.11	< 2	1	0.14	< 2
Perceived Aggression	1	0.21	< 2	1	0.64	< 2
Evaluation of Motivations	1	0.14	< 2	1	0.23	< 2
Evaluation of Consequences	1	0.31	< 2	1	0.23	< 2
Residual	61	0.35		80	0.33	

(See page IV-15) (See page IV-15)

Physical Aggression After Score

	Preschool and Fifth			Preschool, Fifth, and Twelfth		
Source	df	MS	F	df	MS	F
Regression	9	2.16	6.93**	9	2.46	8.27**
Sex	1	0.92	2.97[a]	1	1.78	5.93*
Grade	1	0.92	2.97[a]	1	0.18	< 2
Depicted Aggression	1	0.01	< 2	1	0.38	< 2
Depicted Motivation	1	0.01	< 2	1	0.06	< 2
Depicted Consequence	1	0.12	< 2	1	0.13	< 2
Perceived Aggression	1	0.21	< 2	1	0.01	< 2
Evaluation of Motivations	1	0.49	< 2	1	0.23	< 2
Evaluation of Consequences	1	1.14	3.68[a]	1	0.95	3.17[a]
Physical Aggression Before Score	1	15.61	50.35**	1	18.38	61.27**
Residual	60	0.31		79	0.30	

(See page IV-15) (See page IV-15)

[a] $p < .10$

* $p < .05$

** $p < .01$

Appendix A-V

ANOVA Tables

Justification for Aggression and Subsequent Aggression

Understanding of Manipulation

	Good Person			Fair in Dealings			Deserve to Lose		
ource	df	MS	F	df	MS	F	df	MS	F
- Grade	2	14.55	1.14	2	103.04	8.34**	2	90.85	6.26**
- Sex	1	92.49	7.27**	1	53.84	4.36*	1	34.56	2.38
- Justification Condition	1	840.22	66.09**	1	647.54	52.39**	1	284.17	19.59**
B	2	6.68	0.53	2	18.75	1.52	2	27.16	1.87
C	2	19.63	1.54	2	38.87	3.14*	2	3.78	0.26
C	1	129.49	10.19**	1	24.19	1.96	1	0.44	0.03
B C	2	38.19	3.00[a]	2	24.91	2.02	2	4.44	0.31
thin Cells	148	12.71		148	12.36		148	14.51	

(See pages V-4, V-5, V-6)

[a] $p < .10$

* $p < .05$

** $p < .01$

Appendix A-V

ANOVA Tables

Justification for Aggression and Subsequent Aggression

ANOVA Table for Choice of
Physical Aggression on Response Hierarchy

Source	df	MS	F
A - Grade	2	0.35	4.56*
B - Sex	1	3.14	40.52**
C - Justification Condition	1	0.01	0.19
A B	2	0.04	0.57
A C	2	0.01	0.16
B C	1	0.07	0.86
A B C	2	0.07	0.85
Within Cells	148	0.08	

(See page V-6)

Planned Comparison and ANOVA Table for Choice of
Physical Aggression on Response Hierarchy

Source	df	MS	F
A + C + AC (A = Grade, B = Justification Condition)	5	0.75	9.38**
Contrast	1	0.52	6.55*
Residual	4	0.06	0.75
B + AB + BC + ABC (B = Sex)	6	3.43	42.88**
Within Cells	148	0.08	

(See page V-8)

* $p < .10$

** $p < .01$

Appendix A-VI

ANOVA Tables

Total Comprehension Score

Source	df	MS	F
A - Sex	1	3.09	1.20
B - Separation	1	3.26	1.27
C- Grade	2	69.45	27.02**
A B	1	1.74	0.68
A C	2	7.19	2.80[a]
B C	2	6.14	2.39
A B C	2	3.65	1.42
Within	131	2.57	

(See page VI-6)

Planned Comparison for Total Comprehension Score

Source	df	MS	F
Between	11	16.45	6.40**
Planned Comparison	1	76.77	29.87**
Rest	10	10.41	4.05**
Within	131	2.57	

(See page V-8)

[a] $p < .10$

** $p < .01$

Appendix A-VI

ANOVA Tables

Physical Aggression Change Scores

	Response Hierarchy			Program Similar Items			Program Specific Ite		
Source	df	MS	F	df	MS	F	df	MS	F
A - Sex	1	.48	1.07	1	.00	<1	1	.00	<1
B - Separation	1	.19	<1	1	.47	<1	1	.26	<1
C - Grade	2	5.75	12.84**	2	15.91	22.54**	2	3.65	5.00
D - Questionnaire	1	.00	<1	1	3.25	4.61*	1	9.96	13.62
A B	1	.46	1.04	1	.97	1.37	1	.53	<1
A C	2	11.43	25.53**	2	30.28	42.88**	2	6.90	9.44
A D	1	.92	2.05	1	7.91	11.21**	1	20.07	27.45
B C	2	10.11	22.59**	2	27.51	39.07**	2	6.27	8.58
B D	1	1.06	2.37	1	6.53	9.24**	1	20.04	27.41
C D	2	11.71	26.16**	2	7.28	10.31**	2	10.67	14.60
A B C	2	.14	<1	2	.21	<1	2	.10	<1
A B D	1	.02	<1	1	.00	<1	1	.52	<1
A C D	2	.12	<1	2	.08	<1	2	.48	<1
B C D	2	1.39	3.10	2	.56	<1	2	.23	<1
A B C D	2	138.72	309.90**	2	48.54	68.75**	2	23.35	31.80
Within	249	.45		249	.71		249		

(See page VI-10)

* $p < .05$
** $p < .01$

Appendix A-VI

ANOVA Tables

Physical Aggression Change Score

	Response Hierarchy			Program Specific Items			Program Similar Items		
Source	df	MS	F	df	MS	F	df	MS	F
A - Sex	1	0.01	0.03	1	0.07	0.12	1	0.69	1.03
B - Condition	2	0.11	0.25	2	0.43	0.75	2	0.38	0.56
C - Grade	2	2.50	5.73**	2	5.72	10.13**	2	13.33	19.84**
A B	2	0.15	0.35	2	0.44	0.79	2	0.06	0.08
A C	2	1.63	3.72*	2	2.18	3.87*	2	3.43	5.10*
B C	4	1.47	3.37*	4	0.76	1.35	4	0.43	0.63
A B C	4	0.37	0.84	4	0.71	1.25	4	1.11	1.65
Within	188	0.44		188	0.56		188	0.67	

(See page VI-14) (See page VI-17) (See page VI-17)

Response Hierarchy
Planned Comparison

	df	MS	F
Between	17	0.95	2.16**
Planned Comparison	1	4.29	9.76**
Rest	16	0.74	1.68[a]
Within	188	0.44	

(See page VI-16)

[a] $p < .10$
* $p < .05$
** $p < .01$

Appendix A-VI

ANOVA Tables

Physical Aggression Change Score

Response Hierarchy

Source	df	MS	F
A - Sex	1	.01	<1
B - Condition	2	.11	<1
C - Grade	2	2.50	6.22**
D - Initial Aggression	1	5.68	14.12**
A B	2	.42	1.05
A C	2	5.22	12.99**
A D	1	12.05	29.97**
B C	4	3.94	9.78**
B D	2	15.16	37.70**
C D	2	14.38	35.77**
A B C	4	.37	<1
A B D	2	.75	1.86
A C D	2	.47	1.17
B C D	4	.39	<1
A B C D	4	53.93	134.10**
Within	170	.40	

(See page VI-18)

* $p < .05$
** $p < .01$